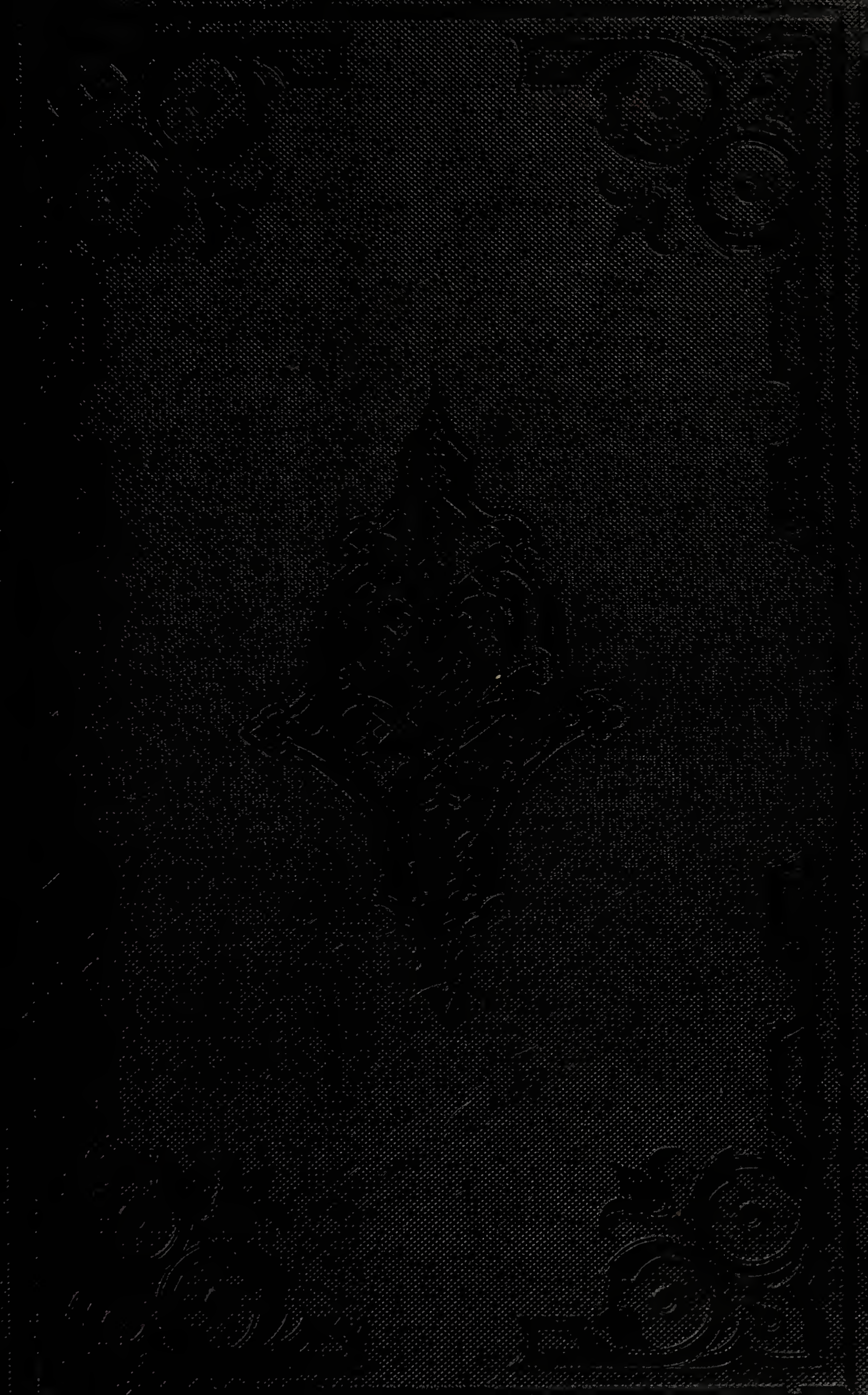


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ON THE

CAUSES AND TREATMENT

OF

ABORTION AND STERILITY:

BEING THE RESULT OF
AN EXTENDED PRACTICAL INQUIRY INTO THE PHYSIOLOGICAL AND MORBID CONDITIONS OF THE UTERUS, WITH REFERENCE ESPECIALLY TO LEUCORRHŒAL AFFECTIONS AND THE DISEASES OF MENSTRUATION.

BY
JAMES WHITEHEAD, F.R.C.S.
SURGEON TO THE MANCHESTER AND SALFORD LYING-IN HOSPITAL.

Και γαρ εγων, επικουρος εων, ... ηκω . . .
'Αλλ' ἄγε δὴ καὶ νῶϊ μεδώμεθα θόυριδος αλκῆς.
HOM. ILI. Lib. v.

Quidquid valde utile sit, id fieri honestum, etiam si antea non videretur. — CIC. DE OFF. Lib. iii.

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WILLIAM LAMBERT, ESQ.,

OF SOWERBY, THIRSK, SURGEON;

FORMERLY ON THE MEDICAL STAFF OF HER MAJESTY'S GRENADIER REGIMENT OF GUARDS, SERVING IN THE PENINSULAR WAR, ETC., ETC.

My Dear Sir,

I venture to inscribe the following Work to you as a feeble testimony of my gratitude for your valuable instructions, and your kind and fatherly counsel, and as an affectionate reminiscence of a sincere friendship which has been continued through many years, uncheeked and unvarying.

But independently of personal obligation, respect for your superior intellectual endowments, and admiration of those moral excellencies which have been unceasingly exercised, with motives of the purest philantrophy, to soften and cheer the lot of the unfortunate, place you pre-eminent in my estimation.

The incentives to the present undertaking originated partly with you; and I earnestly hope that you may not consider the result of the investigation valueless.

That you may long be spared, a blessing to those around you, and an ornament to the circle in which you live, is, my dear Sir, the sincere wish of

Your obliged and affectionate friend,

J. WHITEHEAD.

Oxford Street, Manchester,
June 21st, 1847.



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INTRODUCTION.

Among the objects of research to which men of science have directed attention of late years, few have possessed a higher intrinsic interest than the Function of Reproduction; and, considering the numerous difficulties that prejudice and the peculiar nature of the subject opposed, there are perhaps few branches in which their labours have been more fruitfully rewarded. The multitude of conflicting theories which had from time to time been promulgated with a view to explain the various phenomena of this mysterious process,—many of them equally absurd and unphilosophical, and all insufficient for the purpose,—have in great measure vanished before the light of modern investigation; and the subject, if not fully elucidated in all its parts, is at least placed upon a surer scientific basis.

The field, however, was not void of cultivation when the efforts which have recently proved so signally prosperous, were first attempted. The experiments and observations of Leeuwenhoek, Cruikshank, the Hunters, and other physiologists of the last and preceding

centuries, on the nature and properties of the spermatic fluid, and the anatomy and functions of the ovaries and uterus, were so many fundamental truths: they constitute, in fact, the groundwork upon which embryology now rests its claims to be considered as a distinct branch of physiological science; and which, by the able contributions of recent observers, has now become invested with definite proportions. Amongst these may be mentioned the names of Wagner, Barry, A. Farre, Carpenter, Gendrin, Donné, Negrier, Raciborski, and other eminent men both in England and on the Continent.

And although the grand object of these researches,—the application, namely, of the principles which they are intended to establish, to the purposes of the economy, — has not hitherto been fully attained, so far at least as the healing art is concerned; their utility is, nevertheless, far from being limited to the mere explanation of physiological phenomena. As for instance, in juridical processes, on some leading points of evidence in cases of alleged criminal intercourse, a knowledge of the distinctive characters of the spermatic and the other animal fluids, will enable the medical witness, by the employment of means which modern science has placed at his command, to declare whether an emission has actually taken place or not; a point of cardinal importance as regards the requirements of the law in these cases. Again, as a means of diagnosis between simple urethral or vescial catarrh, and atonic escape of the seminal secretion, both which so frequently occur after long-existing gonorrhœal affections, and as a conse-

quence also, of excessive sexual indulgence, microscopical examination of the discharge can alone be relied upon in determining the true nature of the disease. But perhaps the most curious part of this inquiry refers to the functions of the ovaries, and especially to the history of the ovum and its relation to those of menstruation and fecundation. However limited in its practical bearings, the subject in this point of view cannot fail to prove extremely interesting, intimately concerned as it is in the origination and development of a chain of operations which reaches eventually to the most important results; whether considered in connection with menstruation merely, or the more recondite phenomena of conception, and the subsequent evolution and maturation of the fertilized ovum. The existing state of knowledge upon this subject, is principally due to facts furnished by the study of microscopal anatomy, human and comparative, of the reproductive organs, aided by the processes of analytical chemistry.

There are many points, however, connected with the various organic changes and products of the uterus, which have as yet received little or no satisfactory elucidation, either from post-mortem dissection, or by aid of the microscope. For example, the physiognomical appearances of the lower uterine orifice during life, whether healthy or diseased; the distinctive characters of simple catamenial turgescence, of mere organic suffusion, and of inflammatory congestion of the cervix uteri; the constantly varying aspect which the cervix presents during the early months of pregnancy, offering a

most valuable, and perhaps the only test whereby the existence of pregnancy can with any degree of certainty be known during the first three months of the process; the change observed in the secretions under the last-named circumstance; the true nature and characteristic properties of the menstrual fluid; the quantity of this material that may be thrown off consistently with a healthy state of the system; the precise part of the organ by which it is furnished under normal conditions; the deviations sometimes observed in its periodicity; its occasional appearance periodically during the gravid state of the uterus; the conditions which principally influence this function under these different circumstances; together with its ever varying properties in health and disease; — all bearing in a most important manner upon practice, have hitherto received no satisfactory explanation.

Conception consists in the fecundation by the agency of the male, of a germ previously existing in the female, and destined, by a series of concurrent operations, to be invested with endowments similar to those of the parent, and to be rendered capable, in process of time, of exercising similar functions. The period assigned by Nature for the maturation of the ovum into a being fitted for a separate state of existence, is about nine months; and although a child born before the completion of this term may live and become healthy, its parts are nevertheless imperfectly developed; and there is every reason in such cases for believing, that had the process been continued, the organs of the individual, both mental and

physical, would have been better fitted for the fulfilment of their respective offices.

The earliest period at which the fœtus is considered independently viable, is the end of the sixth month of its uterine growth; the chances of life, which in all instances of premature delivery, are very precarious, increasing as the process approaches more nearly to completion. From a statement hereafter to be made, it will appear, that of children born between the end of the sixth and middle of the ninth month, more than two-thirds die before they are brought into the world, and of the rest, considerably less than one-fifth survive beyond the age of a month; so that the value of infant life under these circumstances is extremely limited. The immense number of instances wherein pregnancy terminates prematurely, — including its occurrence at all stages of the process, — attended often with disastrous consequences to the mother, invests the subject of abortion with an importance which few others possess; rendering its causes and phenomena deserving the strictest investigation.

The causes of abortion are generally referred to accidents, as falls, blows, over-exertion, want, mental perturbation, and the like; but in many events thus accounted for, the exciting agency appears so very trifling, that were such influence to be equally injurious upon every individual upon whom it is exercised, the full term of utero-gestation would rarely be accomplished. Some women, even of delicate frame, — the uterus being in a normal condition, — will endure in an extraordinary

manner during pregnancy, hardships and privations of the severest description; fatigue, starvation, grief, and cruelty; disease, external violence, and a variety of pernicious practices pursued with criminal intention, without in any way interfering with the well-being of the fœtus. Hence may be reasonably inferred the existence of a potent predisposing cause in many so called accidental miscarriages.

But in more than three-fourths of all the abortions which happen, no accidental or other appreciable cause can be assigned by the patient for the occurrence. This fact was ascertained by statistical inquiry of several thousands of patients seeking relief at the Institution with which I am officially connected. When further interrogated respecting their own or their medical attendant's opinion on the subject, the event was for the most part vaguely referred to that state of the system popularly denominated an "inward weakness;"—a convenient expression by which an important and extensive class of diseases is summarily disposed of, whose real nature is as little understood, as the practice adopted for their relief is unscientific and empirical. This term refers, generally speaking, to one leading symptom, namely, leucorrhœa or the "whites," the existence of which was so constant in those cases of abortion for which no known cause could be assigned, as to lead to the suspicion, that the condition upon which this phenomenon depended, was that also which commonly interfered with the favourable continuance of utero-gestation. Having, by the evidence of

a number of observations, arrived at a conviction upon this point, I was not long in adopting the only procedure calculated to afford the necessary information respecting the nature and seat of the lesion with which leucorrhœa was commonly associated.

A great proportion of the patients admitted for treatment at the Manchester Lying-in Hospital, apply with a view principally of procuring the aid necessary in parturition, and for the contingencies of the puerperal period. But as the Institution professes to afford relief in all cases of disease peculiar to women, as well as in those of children, a considerable number of applications are made by women in the early stages of pregnancy for disorders incidental to that period; some during lactation, still suffering under the effects of difficult labour, or of imperfect recovery, and nursing, for the most part, an ailing infant; some are admitted who are neither pregnant nor suckling, as well as a number of young umarried females, labouring under retention or suppression of the menses, leucorrhœa, prolapsus, hysteria, chlorosis, and similar affections connected with disordered menstruation. In all such cases, I made it a point, whenever practicable, to examine the uterus with the speculum, and almost invariably found the existence of disease of this organ sufficient in extent to bring the other symptoms under the arrangement of sympathetic disturbances merely. This view was confirmed by the results of the treatment adopted. I have now examined upwards of two thousand such cases, and the result has almost invariably been the same.

The frequent existence of uterine disease being thus satisfactorily ascertained, it became an object of importance to discover under what circumstances it most commonly originated. This involved an inquiry into the history of menstruation, so far at least as regards the conditions which mainly influence this function at the period of its commencement. Accordingly, the age, temperament, habit of body, hereditary and acquired peculiarities of constitution, occupation, &c., of a number of individuals, together with the proportion of unfavourable cases on the occasion of the first menstrual crisis, and the character of disease under which each appeared to suffer at the period in question, were carefully noted down, and arranged, as far as the intricate nature of the subject would allow, in statistical form. The important relations which subsist between the manner in which the catamenial functions are performed in early life, and the successful accomplishment of their offices subsequently, is too obvious to require apology for the introduction of these particulars.

Disease of the uterus entails an incalculable amount of distressful suffering; leading often to abortion, uterine unfruitfulness, and not seldom to fatal consequences. It is equally prevalent among the high as among the lower orders of society, so far as my experience extends; and is so commonly met with, that scarcely less than one half of all married women between the ages of twenty and forty-five, besides others differently circumstanced, are constantly suffering under its influence. It is difficult to make out why an

evil of such magnitude in the aggregate, and one which is, at the same time, so completely amenable to remedial agency, should have so little engaged the attention of British practitioners. In the course of a pupilage of several years' duration, including the year 1831 and portions of the four following years, in the London and Provincial Hospitals, I do not remember having witnessed a single instance — with the exception of a few cases of malignant disease — wherein the speculum or any similar means were employed in the investigation of disease of the uterus; although numbers, doubtless, were constantly under treatment for complaints of anomalous character, having their origin in lesions of this description.

On the Continent the subject, although not very greatly in advance, has nevertheless been very differently dealt with. During my attendance at the Paris Hospitals in the year 1836, and also on a subsequent visit to the French capital, I had frequent opportunities of seeing cases of uterine disease in the practice of M. Emery at the Hospital of St. Louis, in that of M. Ricord at the Hospital du Midi, and elsewhere; but the class of patients applying for relief at that period were principally women of doubtful character, to whom I then believed these affections to be almost peculiar. It will appear, however, in the course of the present treatise, that this was a mistaken idea, the result of a very imperfect acquaintance with the pathology of the uterus.

The admirable treatise on "Inflammation, Ulceration,

and Induration of the Cervix Uteri," recently presented to the public by Dr. J. H. Bennett, will have tended materially to direct attention to this branch of medical science; and the subject will doubtless increase in interest as the spirit of inquiry shall become more generally awakened. The opinions promulgated by this author, however, are far from being universally adopted; many are willing to believe his accounts exaggerated, although I have nowhere heard that experience has proved them incorrect. My own personal knowledge enables me unhesitatingly to affirm, on the authority of a multitude of facts, that Dr. B.'s statements in reference to the extreme prevalence of uterine disease, are not only borne out in practice, but as regards their occurrence during pregnancy, to which department of the subject he has but incidentally alluded, they are decidely under-estimated.

It is my purpose to record in the following pages, some of the results of a series of observations on the progressive changes, healthy and pathological, which the lower part of the uterus presents to tactile and specular examination during pregnancy, the effects which lesion of these parts appears to exert upon the process of utero-gestation, and upon the function of reproduction generally, and the manner in which they are capable of being influenced by remedial agency. No theoretical arguments are attempted in support of preconceived opinions. On the supposition that much uncertainty still existed relative to this branch of pathology; from a knowledge also of the fact, that how-

ever accurately the science of embryology may have been defined, its applicability to practical purposes is nevertheless extremely limited; that no department of the healing art indeed, is less perfectly understood, or more thoroughly empirical; the inquiry was started at a point where the subject appeared to have a palpable beginning. The facts were noted down in the order of their successive occurrence, and the conclusions thence derived are given in the form in which the simple processes of induction have served to arrange them.

It has frequently been alleged as a reason why disease of the uterus has been so little studied in this country, that the peculiar prejudices of the people render the necessary procedure impracticable. I believe such a state of feeling to be in great measure imaginary and not real, and that it exists far more strongly in the mind of the practitioner than of the patient. I confess to have encountered some objecting parties at the commencement of my inquiries, especially in public practice, arising apparently, from an impression entertained by the patients, that because objects of charity, they were therefore to be made the subjects of experiment. Their apprehensions soon vanished, however, as the benefits accruing from the practice became more generally acknowledged and appreciated. The applications for treatment for affections of this particular class are now numerous and voluntary; the requisite information is eagerly communicated, and a feeling of disappointment is frequently evinced, — the patient often going away dissatisfied, — if the usual mode of investigation

be not practised. I can easily imagine that those medical men who have witnessed the employment of the speculum in the Paris Hospitals may well entertain the impression that a similar mode of proceeding could with difficulty be accomplished in England, even among a similar class of patients. But the procedure which I have to recommend, is divested of every objectionable point which can be urged against that adopted by the French practitioner; while it possesses the advantages of greater facility and expedition, and is equally efficient in every respect.

The proper and most convenient mode of prosecuting specular inquiry, and of managing the local treatment, is to have the patient reclined on her left side, upon the edge of a bed or couch, in the same position as that preferred in this country during the process of parturition. The instrument is introduced without ocular aid, and no part whatever of the person is exposed. The diseased organ is at once brought into view, and the remedies are applied with facility, and without occasioning the slightest suffering. The operation is not in the least irksome or painful; the whole not occupying more than two or three minutes at most.

A similar mode of proceeding is to be adopted in the impregnated as in the unimpregnated state. The situation and appearance of the organ will of course be found considerably different nnder the two conditions: they vary according to circumstances connected with the particular stage at which the process of utero-gestation may have arrived, and the particular pathological

condition of the parts; the procedure is equally easy of accomplishment in the one as in the other. No fears need be entertained of disturbing the process, either by employment of the remedies, or the mode adopted for their application;—due care being always directed to the timely use of means with a view to compensate for any sudden diminution or suppression of the leucorrhœal discharge, sometimes consequent upon the treatment; and especially so if the complaint be one of long standing: a precaution equally applicable in the arrest of any morbid evacuation to which the system has for a time been accustomed, however injurious it may have been to the general health previously. Bearing in mind these instructions, no difficulty, it is to be hoped, can possibly occur to any one of moderate tact, and ordinarily conversant with the anatomy of the parts.

But happily, it is only in a small proportion of cases that the speculum is absolutely necessary, either in the investigation or the treatment of uterine diseases. In reference to the former, the remote symptoms, in connection with tactile evidence, are for the most part so prominently developed, and so constantly present, as to reveal in the fullest and most satisfactory manner, not only the existence of the disease indicated, but often also its precise character and extent; and by the aid of a very simple apparatus of my own invention, which I have for a length of time been in the habit of using, the remedies can be applied as safely and efficiently by the patient herself as by the practitioner.

The instrument in question (represented in the

accompanying plate) consists of a glass cylinder measuring about five inches and a half in length, of slightly conical form, having an internal calibre of an inch, to an inch and a quarter in diameter at its upper or uterine extremity, but gradually diminishing downwards to within an inch of its lower extremity, from which point it becomes expanded into a bell-shaped orifice. To this latter extremity, a triangular wing is adapted, projecting nearly three inches from the axis of the tube, and from which point it gradually diminishes in elevation as it approaches in a curved form towards the shaft of the cylinder, upon which it terminates at the distance of an inch from its uterine extremity; it thus describes the segment of a circle which is intended as nearly as possible to correspond to that representing the varying axis of the true pelvis between its lower and upper apertures. When introduced, the instrument, previously smeared with olive oil or pomatum, and held with its curved arm directed upwards towards the arch of the pubis, is forced gently and steadily backwards, until a moderate degree of resistance is felt to hinder its further ingress. In the course of this movement, the upper aperture of the tube describes a crescentic sweep through the vagina, corresponding with the curve of the sacrum, or with the line which indicates the axis of the true pelvis; this is determined by the impingement of the curved arm against the arch of the pubis; the external aperture of the tube being more and more depressed towards the fourchette, while its other extremity is proportionably



PROLAPSUS & DISEASED UTERUS, TUBE.

elevated, at each succeeding step of the operation. The cervix uteri, thus falling unerringly within the upper orifice — which is sufficiently large, under most circumstances, to receive it — is perfectly accessible to the use of remedies, which are applied by means of a piece of lint or other material held between the blades of a long forceps or sponge holder. For an account of its application in the treatment of *procidentia uteri*, in which kind of cases the apparatus in question was first employed, the reader is referred to the article on that subject.

The advantages which this instrument possesses over the syringe in the treatment of uterine disease, will appear sufficiently obvious. In at least nine out of every ten cases of leucorrhœa, the discharge is but a symptom of inflammation or ulceration of the lower part of the uterus, the extent of which varies from a mere follicular speck to the occupation of the entire surface brought into view by the speculum; but seldom implicating any portion of the vaginal membrane below that part of it reflected upon the cervix. This reveals the source of misapprehension respecting the pathology of leucorrhœa, which is generally looked upon as a vaginal affection merely. The local treatment commonly adopted, grounded upon this view, consists in the injection of certain emollient and astringent substances, which do not, once in ten trials, arrive at the seat of disease; and even were they to do so, their remedial effect would scarcely exceed that of so much water, on account of the coating of thick glutinous,

muco-purulent secretion with which the morbid surfaces are always covered, and which it is necessary to remove before the application of a remedy can be made with any reasonable prospect of a beneficial result. But although comparatively inert as curative agents, these injections are for the most part sufficiently irritating to occasion considerable suffering upon the highly sensitive though previously healthy parts of the vagina with which they are necessarily brought into contact; and were they to be used in that more concentrated form calculated to act medicinally upon the disease which they are intended to relieve, this suffering would be unendurable.

By the aid of the instrument now introduced, (which for the sake of distinction I have named the *Prolapsus tube*, or *Diseased Uterus tube,)*[1] the nitrate of silver, alum, sulphate of copper, sulphate of zinc, nitric oxide of mercury, chloride of lime, muriated tincture of iron, and other remedies, either in substance in form of powder, or in solution of any required strength, may be applied directly to the part affected, without in any way implicating other structures, a contingency unavoidable in the use of injections. It cannot of course be always certain that the application shall be confined precisely to the part affected, and to no other; but so long as the remedy does not stray beyond the surfaces immediately contiguous to the disease, it is of no consequence, as the

[1] The *Prolapsus tube* may be procured from the Messrs. Wood, surgical instrument makers, King-street, Manchester.

surrounding textures of the cervix are always, to greater or less extent, implicated in the diseased action, and can only be affected beneficially by extension of the application to them. Chronic endo-uteritis requiring injections into the interior of the organ; polypoid, warty, and other growths; vaginitis, &c., will each, of course, require its peculiar mode of treatment; but these, taken altogether, are of rare occurrence compared with the simple forms of inflammation and ulceration of the cervix, in the management of which the Prolapsus tube is recommended.

The cases interspersed throughout this volume are taken, without any careful selection, from among those recorded during the present inquiry. They have been studiously divested, so far as was consistent with the entireness of the leading phenomena, of all prolix particulars, such as daily reports respecting the character of the pulse, appearance of the tongue, the state of the secretions, &c., which usually render cases so tedious in the perusal. No general rules are offered respecting treatment, for the simple reason, that much remains still to be done in this branch of practice, and also because sufficient appears to have been said on the subject in connection with the illustrative cases.

Many of the facts recorded, I believe to be in great measure new. It may with truth be asserted at least, that in reference to some of the phenomena of menstruation, especially the nature, properties, and source of the menstrual fluid, whether normal or spurious; the physiological and pathological changes observed in

the lower part of the uterus during pregnancy, and the curative means adopted therein; the true nature of leucorrhœal affections and their effects upon pregnancy; and respecting the peculiar action of the syphilitic poison upon the uterus, and its transmissibility to the offspring after having been a long time latently existent in the maternal system, I have received no suggestions, either from published or unpublished authorities. I claim no credit, however, for originality. Similar facts may have been collected, and like conclusions arrived at by others not known perhaps beyond their own particular sphere. And that similar results will hereafter be obtained I feel confident, on the faith of the common sense proposition, that "the events of the past will in all human probability be simulated in the future."

Oxford Street, Manchester,
June 21, 1847.

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CHAPTER I.

MENSTRUATION.

Signs of Puberty.

The natural and healthy appearance of the catamenial discharge in the human female is a presumptive proof that the individual is in a condition rendering her capable of bearing children; and it may be regarded as a proposition requiring no demonstration, that, whether on account of local or constitutional defect, when the organs of generation are incapacitated for the performance of this function, conception cannot take place. It is not however necessary, in order to the efficient accomplishment of the process of utero-gestation, that the menses should have previously appeared; for this circumstance, as will hereafter be shewn, is no adequate evidence that the person does not possess all the conditions requisite for child-bearing.

On the other hand, the establishment of the catamenial discharge, and its regular and healthy repetition, is not always conclusive as to the completeness of the organs of generation, or of the constitutional aptitude for procreation. The function may, to all outward appearance be duly performed, the body be well-proportioned and vigorous, the health unexceptionable; and yet the woman, even under the most favourable circumstances, may remain barren. In what manner the

phenomena of menstruation and of impregnation are reciprocally related, and to what extent the successful accomplishment of the one is affected by, or dependent upon, the same organic agency which influences the other, the observations hereafter to be made may serve in some measure to explain.

Menstruation consists in a peculiar action of the organs of generation, manifesting itself periodically, by which a quantity of sanguineous fluid differing, under some circumstances, in one or two important particulars from the circulating mass, is thrown off, and which, on account of its monthly recurrence, has been denominated the menstrual or catamenial flux. The period of life at which this phenomenon is first noticed, called the age of puberty, varies considerably in different individuals; in some occurring as early as the tenth, in others not till after the twentieth year, and sometimes earlier or later according to the influence of circumstances hereafter to be mentioned. The age at which menstruation finally ceases is even more variable than that of its commencement, and is generally believed to be regulated by the same causes; it is, probably, most of all influenced by the habit of body acquired during the middle period of life, the number and kind of pregnancies which the individual may have experienced, her state of health generally during the child-bearing period, the trials she has had to encounter, and to some extent, by hereditary predisposition

The age of puberty is distinguished by a series of changes as remarkable in the effect which they produce upon the character, morally and physically, as their operations are important in the animal economy. They are more or less strongly marked in every case; and, from the circumstance of this period having been at all times regarded as one preeminently favourable to the propagation of new forms of disease, or the development of those the latest germs of which already exist, it is usually anticipated with the greatest

anxiety. Before the first appearance of the menses, and after their cessation, the female constitution differs but slightly from that of the male in its susceptibility to morbid action, or in the character of the disease by which it may become affected. During the term of child-bearing, on the contrary, its disorders are of a class widely different in their nature from those which assail it under other circumstances, being altogether peculiar to the female frame during this period of life.

On the approach of puberty the body undergoes a notable alteration in its growth and development. The stature in the majority, though not in all instances, is fully attained by the time the crisis is accomplished; but the change exhibited in its other proportions, is especially striking. The chest becomes full and expanded; the breasts are more prominent, the nipples perceptibly enlarged and irritable; and the neck, throat, limbs, and features are more plump and rounded. The growth of hair and the cutaneous tint participate in the general metamorphosis; and the voice acquires a full, mellow, and more sonorous intonation. It is now that the female figure acquires that exquisite elegance of symmetry, the complexion its peculiar bloom of health and beauty, and each feature that speaking brilliancy of an expanding intellect, often joined with an artless simplicity and an indescribable gracefulness of action, which, of all Nature's productions, are to be found united in woman alone. Evidences of these changes are often detected many months, sometimes years before puberty; but more commonly they occupy a much shorter period; the lank figure and unrestrained movements of the girl being changed, in the space of a few months, into the finished form and reserved manners of conscious womanhood.

The condition now described, tending obviously to a state of general plethora, is in due time relieved by a means which

Nature adopts for the purpose, and which is generally attended, at the onset, with more or less of constitutional disturbance. The manner of the individual is perceptibly altered; she evinces a disinclination to share in her accustomed enjoyments and exercises; she is languid and listless, often reserved and fretful; the appetite is capricious, the secretions vitiated, the bowels irregular, the sleep disturbed and unrefreshing. Pain of the back and head, and a sense of fulness and weight of the abdomen supervene; accompanied, not unfrequently, with heat and a troublesome irritation about the lower part of the person. Often these symptoms are but slight and transitory, being soon relieved by the vaginal discharge, which, after continuing a few days, subsides, and the health is speedily restored. The discharge does not always, at first, present the true characters of menstrual blood; being at times merely a thin mucous or serous fluid, transparent, or but slightly coloured, assuming at each succeeding period more of the normal appearance, which it acquires only after several repetitions.

It is not always, however, that this desirable end is so opportunely accomplished; on the contrary, it may be long protracted, and symptoms of disease become more decidedly manifest. Excessive languor, drowsiness, violent pain of the head, along the spine, and around the lower region of the abdomen and pelvis, with alternate rigors and feverish reaction, clearly indicate a loss of balance in the circulatory and nervous systems, which, if not timely remedied, must inevitably lead to injurious consequences. These symptoms are occasionally aggravated by exposure to a cold or damp atmosphere, over-exertion, anxiety, disappointment, and other causes; and mischief of a serious, often of a lasting nature, is the result. Such a consummation is the more to be dreaded, if the individual have previously suffered under organic inflammatory affections, or if she inherit a tendency to maladies

of a specific nature. These disturbances may exist for months or years before menstruation can be brought about; and they not unfrequently terminate in fatal organic disease.

Previous to the first appearance of the menses, and during their flow, the complexion, especially in lymphatic or bilious subjects, sometimes assumes a sallow or greenish tinge, and the eyes are surrounded by a dark areola; these appearances, which are noticeable in greater or less degree ever afterwards during the menstrual period, are generally the result of functional difficulty at the commencement, and for the most part are associated with a languid circulation through the veins, and low nervous power. The skin is particularly liable at this crisis to eruptive diseases, coming on with the other indications of puberty, and not unfrequently continuing to disfigure the features for several years. The boil, and irritable pimple, are the most common of these affections. A congested state of the mucous membranes throughout the body is frequently remarked, resulting in catarrhs, sometimes in discharges of blood from the nose, lungs, or alimentary canal. This tendency to local accumulation, conjoined with a highly excitable state of the brain and nervous system, manifestly constitute that condition so favourable to morbid action at this period of life, and especially to the development of those forms of disease to which an hereditary proneness previously existed.

Periodicity of Menstruation.

The phenomena of menstruation are generally understood to recur monthly, the discharge occupying from three to seven days of this term, of which the remainder is a free interval. Deviations from this rule, however, are by no means uncommon; they are noticed, indeed, by the oldest writers, although we seek in vain for any statistical data sufficiently ample and connected to settle the question satis-

factorily. The subject is expressly mentioned, and the contingency especially provided for, in the laws concerning the sacrifices in the Mosaic records, from which it appears that the menstrual period among the Jewish women was on the average seven days at least, and sometimes longer. In the nineteenth verse of the fifteenth chapter of Leviticus, it is ordained that a woman having her issue "shall be put apart seven days": this rule applies in all cases; and in reference to those instances where the issue occurs at irregular periods, or exceeds the "days of her separation," it is stated in the twenty-fifth verse of the same chapter, "And if a woman have an issue of her blood many days out of the time of her separation, or if it run beyond the time of her separation, all the days of the issue of her uncleanness shall be as the days of her separation." Some writers have stated that the menstrual discharge is augmented periodically, as upon alternate occasions, or at every third or fourth recurrence. Aristotle believed that such an increase took place every third month; and it is probably on the faith of this assertion that the possibility of this and other irregularities has been allowed by subsequent authorities. The subject is undoubtedly one of great importance, especially to mothers and those entrusted with the education and management of the female sex in early life, who, unacquainted with medical literature, are not prepared to regard these functional irregularities in the proper light. They are often the occasion of considerable, though perhaps unnecessary alarm, from the belief that disease, if not already apparent, must of necessity be impending; and not unfrequently much harm is effected from premature medical interference or improper dietary regulations, perverting a means which nature had beneficently employed with a special aim for the well-being of the œconomy, to results of an opposite description.

With a view to ascertain, as correctly as was practicable,

how far erratic menstruation was consistent with a state of health, I instituted a number of inquiries, and obtained the following results. It may be mentioned *in limine*, that of the individuals interrogated, amounting in all to several hundreds more than are indicated below, none were admitted of whom the history was not fully and authentically attested. Whenever the report, from want of clearness in the detail furnished, appeared unsatisfactory; where ill health or other accidental circumstances seemed to interfere with the due and natural performance of the function, the case was rejected; my object being to ascertain how far any deviation from what is generally understood to be the ordinary rule of nature in regard to menstruation, might exist consistently with a state of perfect bodily health.

Of five hundred and twenty intelligent, many of them educated, women, in whom menstruation had commenced favourably and been continued regularly at the periods peculiar to each for a sufficient length of time together to afford a fair average, three hundred and fifty-nine had always menstruated regularly, no particular difference being observable either in the length of the interval between one period and another, or in the number of days during which the menses continued to flow: in several some slight difference had been occasionally noticed in the quantity and appearance of the discharge, but unattended by any concomitant effect upon the general health. The cases differed individually one from another, however, to a considerable extent. In about one tenth of the number of the cases last mentioned, which may be termed *regular*, the menstrual periods recurred at intervals varying from twenty to twenty-seven days (calculating always from the day of commencement of one period to that of the next following); but in the majority the interval was a lunar month. But whatever the interval, whether twenty or thirty or any intermediate number of days, it had always been the

same in the same person for a considerable length of time in this group of cases. For example, a lady of the bilious temperament, of a delicate though healthy frame, and of an anxious disposition, during a period of more than two years menstruated, without interruption or deviation, every four weeks, commencing always on the Monday morning, and ceasing on the following Saturday. Another, very similar in habit of body and circumstances, commenced always on the Thursday and ceased on the following Sunday. One woman, who was employed as a hawker of earthenware goods, of a strong and healthy constitution, light hair and ruddy complexion, commenced for years on the Tuesday, the discharge never continuing longer than twenty-four hours. Eight others of different habits of body, and variously occupied, menstruated only one day each time. In three individuals, of whom two had the bilious and one the lymphatic temperament strongly expressed, menstruation recurred every four weeks, and continued never less than thirteen days, the discharge being abundant and uninterrupted the whole time. These were all employed as mill operatives, but now solely in domestic occupations, being mothers of families. Since marriage, the health of each has been equally good as before, and no difference in the functional discharges, or their times of recurrence, has been observed, except during the periods of child-bearing and lactation. In the majority of the cases included in this group, whatever the free interval may have been, the menstrual discharge generally occupied a period of from three to seven days.

Of the remaining one hundred and sixty-one cases, which may be called *irregular;* in fifty-one, menstruation recurred every lunar month, but every third or fourth return a difference of three or more days was observed in the duration of the discharge, and often a difference, also, in the quantity thrown off in a given time; thirty-eight menstruated every

lunar month generally, but every third or fourth time from four to seven days earlier; and these deviations were so marked and constant in most instances as to be anticipated at particular times: the amount of excreted fluid was also variable in these cases; fifteen had the menses every three weeks generally, but every third or fourth return from four to seven days later; fourteen every twenty-four days, but occasionally the interval was twenty-eight days; five every five or six weeks, but having occasionally an interval of only a month; two every eighteen days, of whom one had the discharge four days and a free interval of only fourteen — the interval now and then, however, being two or three days longer, and the duration of the discharge correspondingly abbreviated; the other having every third or fourth time an interval of a month. One menstruated every lunar month, but at the middle of every third interval she had an additional discharge every way similar to the catamenial, which continued thirty or forty hours, making no perceptible difference in the regular periods. Two menstruated every fourteen days, in one of whom the discharge generally continued seven days, leaving a free interval of seven, — but occasionally the interval was ten days and the active period only three or four; in the other case the discharge generally continued two days, but sometimes only a few hours. One individual had the menses monthly, but every third time she missed the period, having a free interval of two months, her health never suffering in consequence. And thirty-two menstruated so irregularly as to afford no means of calculating the periods of recurrence or their duration with any degree of exactness.

The organs of generation, in regard to their functional activity, appear to be principally regulated by temperament, habit of body, and other constitutional peculiarities; very little difference being made either by change of residence from one locality to another (in the same climate), or

by change of employment, except as regards the degree of heat maintained in the apartment wherein the occupation is pursued, — in reference to which subject more will be said hereafter. In some instances marriage seems to effect considerable change, as in the case of a lady who, before marriage, menstruated regularly every four weeks, the discharge continuing four days each time. She is mother of a family, and has now been several years a widow, during which time the interval between the commencement of one catamenial period and that of the next following has seldom exceeded three weeks, the discharge being the same in duration as formerly. Another lady before marriage seldom menstruated longer than three days and a half; but since, when not pregnant or nursing, the duration of the period is never less than seven days: the recurrences are as formerly. In eight other women similarly circumstanced, the same peculiarity was noticed, the discharge in every instance being either larger in quantity, of longer duration, or more frequently repeated. As a general rule, persons of the bilious, or lymphatic-bilious temperament, have the menstrua in greatest abundance, and continued for the longest period; those of the sanguine temperament, the contrary: this may be owing, in some measure, to the free cutaneous transpiration generally observed in the last-named class of persons. In lymphatic subjects the discharge is usually abundant, but varies considerably, and is doubtless influenced materially by the amount of leucorrhœal discharge voided in the interval, to which affection this temperament predisposes more perhaps than any other.

Quantity of Blood thrown off at each Menstrual Period.

The quantity of blood secreted on the average during each menstrual period is extremely variable, being in some very considerable, in others scanty, and by no means the same on successive occasions in the same individual. It is materially

influenced by the state of the system at the time, and is consequently affected by whatever is capable of influencing the health generally. Attempts have frequently been made to ascertain the quantity by weight; but from the multitude of difficulties which inquiries of this kind involve, it is not surprising that a total want of agreement should be found in the statements of different writers on the subject. Hippocrates and Galen estimated the average amount of the catamenial discharge at about eighteen ounces, a quantity far exceeding what happens under ordinary circumstances in this climate. Haller fixed it at from six to twelve ounces; and other physiologists, with much greater show of probability, as respects this climate at least, at from three to eight ounces.

There are strong grounds for believing that an elevated temperature, whether artificial or natural, affects materially the menstrual function, both as regards the quantity of fluid secreted, and the period of its duration; hence the estimate given by the Greek and early Arabian writers may not be overstated for the climate in which they lived. Cases are not unfrequently met with of an unusually profuse menstruation in persons whose occupation confines them to a heated atmosphere; the discharge becoming augmented in those who have already menstruated, and its sudden and favourable appearance being often noticed in those who for a length of time have laboured under symptoms of its retardation or suppression, on removal to a more genial atmosphere whether in the same or a different climate. This may be illustrated by the following case. A soldier's wife, thirty-seven years of age, about four years since returned from India, where she had resided fifteen years, having during that period borne six children. Puberty was accomplished in this female after several months' illness, at the age of sixteen years. Having menstruated a few times irregularly, she had total suppression attended with chlorotic symptoms, from which she did not recover till after

marriage at the age of eighteen, when she accompanied her husband, whose regiment was under orders of embarkation for India. Her health soon became re-established, and she experienced no further inconvenience save such as is incidental to pregnancy and the puerperal state, till her return to this country in 1843. While abroad, if not pregnant or suckling, she menstruated regularly and without any embarrassment, always recommencing in the sixth month after each delivery, and while still nursing. The discharge was remarkably abundant, pale and thin, recurring every three weeks — reckoning from the beginning of one period to that of the next, and continuing from seven to eight days each time. Since her return to England, it has never come on oftener than every fourth week, nor continued longer at a time than three or four days; it is now also much less in quantity, thicker, and darker coloured. Age and regimen may, of course, have had something to do in determining these differences, but climate probably a great deal more.

Instances are occasionally met with in Manchester which strongly illustrate the effects of a high artificial temperature upon the menstrual secretion; as in the following example. A young woman, nineteen years of age, was lately under treatment for menorrhagia; she was employed in a cotton-mill, her occupation, which was light, being in a well-aired apartment of moderate heat; and she menstruated monthly, the discharge occupying a period of four days at each return. After a time she was removed to another apartment, which, from being situated over the engine-room, was extremely hot. While working in this place the menses came on several days earlier than had before been customary, and continued from nine to twelve days each time, the blood being occasionally clotted. Her health did not at first suffer in consequence. In seven or eight months she was restored to her former locality, but returned, after a few months more, to the hot

apartment, where she remained a considerable time. While occupied in the cooler apartment she had the menses as originally — monthly, in moderate quantity, of four days duration, and not clotted; but on her second removal to the high temperature, the above-mentioned phenomena again appeared. Her health and strength eventually failed under this excessive draining away of the vital fluid. When I first saw her, she was languid, nervous, pale and emaciated; she had a slight tickling cough, palpitation, and a pulse similar in character to that of one labouring under the effects of hœmorrhage. She is now restored to health and vigour. It must not be omitted to be mentioned here, in justice to the Factory System, and in regard to the nature of the employment pursued in these establishments, that this is by no means a common case. The effects which the high temperature maintained in mills—averaging from 90° to 100° Fahr.—produces upon health in the long run, are not really so injurious as some writers have represented, and they are certainly less so than what is observed to accrue from some other occupations usually accounted healthful. The temperature alluded to in the present case probably amounted to thirty or forty degrees above the ordinary average.

Properties of the Menstrual Blood.

Various opinions have at different periods been entertained respecting the nature and properties of the menstrual fluid. Pliny and the early Arabian writers believed it to be loaded with principles of a peculiarly noxious character; describing it as being fœtid, poisonous, and exhaling an effluvium of a delcterious nature. Such also was the popular opinion during greater part of the middle ages; and this prejudice, even in the present day, among the ignorant, is not altogether extinguished. It will scarcely be necessary to remark upon the absurdity of these opinions, as well as of some others, equally

fanciful and gratuitous, promulgated in later times upon this subject.

The ample means of investigation which modern science has supplied, the information especially which analytical chemistry and the microscope are capable of revealing, have enabled men of science to arrive at a knowledge of the intimate structure and composition of the various products of nature, and to determine the minuter shades of difference between structures apparently identical to the unaided senses, with a degree of precision which before was impracticable. In no branch of science have the advantages resulting from these auxiliaries been of greater importance than in the study of animal physiology. By these aids we have been made acquainted with the precise nature and elemental constituents of the blood and other fluids of the body,—their condition in health, and their various changes and modifications under different forms of disease; and the great and ultimate object of medical science — the employment of means, namely, for the alleviation of bodily suffering — has also, in no slight degree, been thereby promoted.

Although differing, apparently, in some of its sensible properties from the healthy systemic blood, the menstrual secretion is believed by some physiologists to be very nearly the same in its constituent proportions. Its great distinguishing characteristic is that of not coagulating on removal from the body; a peculiarity said to be owing to its deficiency of fibrin, but principally, no doubt, to its admixture with the vaginal mucus, in the acid of which fibrin is freely soluble. M. Donné, whose accuracy in matters of this kind is generally admitted, says, "The menstrual blood does not differ, under the microscope, from ordinary blood either in its quantity of red corpuscles or of its fibrin: the only difference it exhibits consists in an acid, instead of an alkaline reaction, which is the case in normal blood; this is owing to its mix-

ture with a great quantity of vaginal mucus, which always exhibits acid propertics. Amongst the menstrual blood, also, are found numerous lamellæ of epithelium of the vaginal mucous membrane, which the fluid entangles in its passage." [1] The results obtained by other physiologists certainly tend to conclusions somewhat different from the foregoing, particularly in respcct to the quantity of fibrin which the fluid in question is said to contain; but their total want of agreement leads always to a doubt as to their correctncss. The analysis given by Simon exhibits an entire absence of fibrin; as also does that by Vogel and Rindskopf; but thc specimen analyzed by Denis contained about one-sixth of the quantity found in normal blood. Simon, however, adds, "There can be little doubt that there is fibrin in the menstrual secretion; its dctermination is, however, usually rendered impossiblc by the presence of a large amount of mucus, which seems to deprive the blood of its power of coagulating." [2] "The catamenial discharge," says Dr. Carpenter, "appears normally to consist of blood deprived of its fibrin; the fluid being composed of serum, in which red corpuscles are suspended, and being readily distinguishable from true blood by its want of power to clot. When clots are found in it, thcrefore, a morbid condition of the secreting surface must be inferrcd." [3]

Dr. Letheby (in a paper reported in *The Lancet,* August 2, 1845,) analyzed a quantity of retained mcnstrual fluid obtained by thc section of an imperforate hymen in a girl seventeen years of agc. It had a dark chocolatc colour, becoming red on exposure to the air; it was perfectly inodorous, and so tenacious that it could scarcely be pourcd from the vessel; altogether, it had the appearance of a dark and thick treacle. Its spccific gravity was 1027, a little below that of ordinary serum.

[1] Cours de Microscope, p. 130. [2] Animal Chemistry, p. 338. [3] Human Physiology, 2nd edit. p. 686.

When examined under the microscope with a power of 300, it was found to be quite free from fibrin, or rather from that form of it which occurs in the coagulum of blood, but consisted of numerous corpuscles floating in a colourless fluid. These corpuscles differed very considerably in form, size, and colour. The conclusions arrived at were: — 1st. By far the greater number consisted of altered blood-discs, which had become so tumid from distension, that when they were viewed edgeways, they apppeared doubly convex, or oval. 2ndly. A multitude of minute granules, not larger than $\frac{1}{20,000}^{\text{th}}$ of an inch, which appeared like the small granules sometimes emitted from the blood-corpuscle, which Dr. L. believes to have been their origin. 3rdly. Some large, coloured globules, densely nucleated, which at first appeared like adherent blood-discs, but a further examination shewed that they were the "exudation globule" of Gerber, the "granule cell" of Vogel, or the "inflammation globule" of Glage and others. They varied in size from $\frac{1}{800}^{\text{th}}$ to $\frac{1}{2400}^{\text{th}}$ of an inch in diameter, and contained two or more nuclei. 4thly. There were many colourless cells (lymph globules) appearing indistinctly nucleated; these were refractive, and were more distinct when the focal distance was increased; they measured about $\frac{1}{2400}^{\text{th}}$ of an inch in diameter. 5thly. A few red oval corpuscles, well defined, and mono- or bi-nucleated. 6thly. A quantity of mucus globules, which were colourless and three or four times the size of the blood-discs. 7thly. The field also presented a great number of scales of plaster epithelium.

Water rapidly dissolved the blood corpuscles, while the other globules and scales were either not affected, or but slightly, even after a long interval. Ether also dissolved the blood-discs, as well as the exudation globules and minute granules; the others were unaffected. Acetic acid rapidly acted on the blood-corpuscles, more slowly on the exudation globules; the others it made more distinct, bringing out their nuclei.

On being chemically examined, the fluid was found to have an alkaline reaction, and was perfectly miscible with water; when heated a little below 212° Fahr., it formed a firm coagulum. Dr. L. then gives a minute analysis of its proximate principles, exhibiting the relative estimate of its mucus, blood-corpuscles, soluble albumen, &c., which, as the specimen examined could not be regarded as the true form of menstrual fluid, and as I have no similar analysis of my own to offer in comparison, I do not deem necessary to transcribe. The results are valuable however, both in a physiological and pathological point of view, on account of the ample supply of the material obtained for examination, and the very unusual circumstances under which it occurred; but they are rendered principally valuable by the very able manner in which the analyses were conducted. As might have been expected, its properties were found to differ in several important points from ordinary menstrual blood. Its most striking sensible properties were its viscidity and alkaline reaction.

It might have been pre-supposed that the fluid of which the analysis has just been quoted, would have exhibited the same reagency as the ordinary menstrual fluid; but the contrary may be easily and reasonably accounted for from analogy with other fluids similarly circumstanced, as retained urine for example, wherein, after a time, ammonia is generated, or liberated, in considerable quantity. The presence of this principle in the above case, may probably be disputed on account of the product emitting no smell. But it must be borne in mind that the acid naturally existing in the vaginal mucus, and constantly in process of being secreted, would, in the first place, require a quantity of the newly-formed alkali for its neutralization; and secondly, that as ammonia enters readily into combination with all the protein compounds, and with the fat contained in the blood, its sensible proper-

ties, although the material were generated in considerable quantity, would soon become partially or entirely lost. To such combination also, may be referred the peculiar viscidity which the fluid in question possessed, and perhaps its comparatively low specific gravity.

The analyses hitherto published on the properties of the menstrual blood have evidently been made upon the discharge in its crude state, largely mixed with another organic product of a very different nature: they might indeed with equal propriety be considered as analyses of the vaginal mucus (which, during the catamenial periods, is secreted in increased quantity,) combined with a certain proportion, sometimes more, sometimes less, of the *true* catamenial fluid. For obvious reasons moreover, it is no easy matter to procure two different specimens, either of the vaginal mucus or of the menstrual fluid, precisely alike, even from the same person. Closely allied as the vaginal membrane is in its organization and in its functions to the external integument on the one hand, and to the true mucous tissues on the other, its sympathies are equally awakened by causes acting through either channel, and thus not only the quantity but also the properties of its product are constantly varying. Sometimes moreover, the uterine mucus is, from similar causes, furnished in unwonted abundance, and the incorporation of this with the vaginal secretion, the two fluids being widely different in character the one from the other, invests the latter with properties not properly belonging to it. The blood exuded from the uterus also during the menstrual period, is sometimes furnished in quantity sufficient to destroy completely the prevailing acid properties of the mucus with which it becomes united in its transit outwards, under which circumstances the discharge exhibits alkaline instead of acid properties, and acquires the power of coagulating. This is often the state of the fluid in cases of menorrhagia. At other

times the menstrual secretion is less than sufficient to relieve the existing vascular plethora; the circulating current is thus immoderately directed towards the vaginal membrane, and an increase in its product is the immediate result. Under such circumstances the vaginal mucus, sometimes in its pure state, at others slightly tinged with blood, or mixed with pus, constitutes the only product of the menstrual effort. In cases of retention or suppression of the menses, the system is often for a length of time relieved by compensating discharges of this kind, the secretion of mucus becoming periodically augmented, assuming the form denominated vicarious leucorrhœa. To the influence of these different circumstances must be attributed the constantly varying characters of the vaginal discharges, both during the activity of the menstrual organism, and at other times; and hence, doubtless, has arisen the discrepancy of opinion entertained by different physiologists respecting the nature and properties of these fluids.

Nature of the Vaginal Mucus.

The mucus of the vagina, in its normal state, always exhibits acid properties; that of the uterus is as constantly alkaline. In no instance have I found the secretion of the vaginal mucous surface produce an alkaline reaction, except in gonorrhœal affections, and in inflammation from other causes, resulting in the secretion of pus. On the other hand, the discharges from the interior of the uterus, whether diseased or healthy, with the exception of those of an ichorous nature, have been, in every instance where I have had an opportunity of testing them, invariably alkaline. In cases of retention of a clot of blood or of a piece of the placenta, or where a portion of the ovum or the whole of it, remains for a length of time unexpelled, after it has ceased to exist, a circumstance which often happens during the early months of pregnancy, the discharge exhibits acid properties, emitting at

the same time an offensive odour: this obviously arises from the process of putrefaction, by which these morbid fragments are frequently thrown off.

Mucus like albumen has the property of coagulating on the addition of an acid, owing, probably, to a small proportion of albumen which, in its healthy state, it is always found to contain. Mucus, however, as well as albumen, will bear the admixture of a small quantity of acid, or of alkali, without undergoing any change in its appearance. But the acid secreted along with the vaginal mucus is, under normal circumstances, in quantity sufficient slightly to coagulate it, and in this state the fluid is generally found; except during menstruation, or when the uterine mucus happens, which is extremely rare, to be produced in unusual abundance.

The parts being in a perfectly healthy condition, the whole surface of the vaginal membrane is covered by this form of mucus, which, when in very small quantity, is transparent; but in places where it is found collected in larger quantity, and especially when collected within the speculum tube during its introduction, it has a milky appearance, is perfectly opaque, and much less viscid than other mucus. It is the mixture of this acid product with the true catamenial fluid in its transit outwards, which gives to the latter the peculiar properties by which it is generally said to be characterized.

Nature of the ordinary Menstrual Fluid.

Of more than fifty specimens of ordinary menstrual blood which I have had an opportunity of examining, the following general results have been arrived at. As chemical analysis has not been attempted, I pretend to no practical knowledge of its constituent proportions. 1st. The acid nature of the fluid was unequivocal in every instance, but with varying degrees of intensity. 2ndly. Its colour was similar to that of healthy venous blood drawn from the smaller vessels, and

never so florid as that of the arteries: it was always less viscid than either. 3rdly. It did not coagulate. In some instances, however, when the discharge, from over-exertion, mental anxiety, or confinement to a heated atmosphere, became unusually profuse, clots were not unfrequently noticed among the secretion, and these had always an alkaline reaction.

Under the microscope it presented a considerable number of blood corpuscles, aggregated in linear or irregular groups, and floating in a pale, pinkish serum; these corpuscles, in the course of a few minutes after the removal of the fluid from the vaginal surface, appeared to diminish in number, some undergoing at the same time a change in their form and size: it occasionally contained a few lymph globules, and generally a number of small granular bodies like oil globules. It always contained, moreover, a great quantity of epithelium scales of different shapes and sizes.

Nature of the true Menstrual Secretion.

The sensible properties of pure menstrual blood, unmixed with the vaginal mucus, are widely different from those of the modified fluid above-mentioned. For the purposes of examination, it may be procured by means of the speculum, care being taken always to remove, by the aid of a piece of lint or sponge held between the blades of a sponge-holder, all the secretion from about the *os* and *cervix uteri*. This must be done immediately after the instrument shall have been properly adjusted, and will be found necessary in order that the fluid may be free from admixture with that exuding from the surrounding surfaces. In consequence of the irksomeness of the procedure, however, the patient will seldom be able to remain in the required posture longer than until from ten to twenty grains have accumulated. This quantity, although too small for the purposes of chemical analysis, will nevertheless be sufficiently large for determining its sensible properties, as well as for microscopic investigation.

Thus procured, I have had opportunities of examining more than a dozen specimens, and have found it, for the most part, possessing the following distinctive characters. 1st. It is never so dark in colour as ordinary menstrual blood, so called, nor always so florid as that of the arteries; its colour, however, seems to vary slightly, being, at certain times, rather more florid than at others. This difference of shade which the fluid exhibits at the moment of its exudation, is attended by no corresponding change in its appearance subsequently, after being incorporated with the vaginal mucus; the effect of this latter product upon venous and arterial blood being very nearly the same. 2ndly. Its consistence cannot be ascertained in every instance, as it does not always flow in a continued stream, unseparated. When collected in its *entire* state, it appears rather more viscid than the systemic blood, owing probably to its slow exudation. 3rdly. When thus collected, it invariably coagulates, the separation of the clot from the serum being sufficiently distinct in three or four minutes: the smallness of the quantity may account for the short time required for the accomplishment of this change. 4thly. It sometimes passes off in a continued stream as pure blood. More frequently it is observed to escape from the *os uteri*, partly in form of a thin, coloured serum, and partly in flattened clots, of the size of small orange seeds, which, soon after their escape, become broken down and dissolved, as it were, in the vaginal mucus, escaping at the *ostium externum* in the usual uncoagulable fluid form. 5thly. It is invariably alkaline, quickly changing the turmeric paper to a reddish brown colour, and the litmus to a decided blue.

Examined under the microscope it appears to be a very simple product, consisting chiefly of a number of blood corpuscles floating in a limpid, almost colourless fluid. The corpuscles are generally observed to be in greater abundance in this than in healthy systemic blood, and perhaps less

clustered together in groups, and more equally distributed. There are often also a few white globules, larger in size than the blood discs, spherical, and nucleated, and a number of very minute granules similar to oil granules, highly refractive; and sometimes, but not always, here and there a scale of epithelium, which, there is little doubt, becomes entangled in the fluid as it passes off, being furnished probably by the mucous surface about the orifice of the uterus. At least such scales do not properly belong to the true menstrual fluid, as it is occasionally observed to be entirely free from them.

It may be proper to state that of the several cases submitted to examination, no difference could be detected as to the leading characters of the fluid between one specimen and another, with one exception. This was a case of menorrhagia, or morbidly profuse menstruation, wherein the discharge, part of which exuded from excoriated surfaces on the *labia uteri*, was as florid as arterial blood, and so thin, that it trickled in drops along the tube, although but slightly inclined, to its outer aperture. This patient possessed the lymphatic temperament, was very irritable, and of relaxed fibre.

From the above-mentioned appearances I conclude, that the *true* menstrual blood is extremely like that circulating through the capillaries in most of its leading properties, probably in all. The circumstance of its ready coagulation is conclusive as to the presence of fibrin, but in what precise proportion I have had no means of ascertaining: it is probable however, that the relative quantity of this constituent in the fluid under consideration, is not different from that which obtains in the circulating mass in its healthy condition.

The following observations and experiments furnish additional arguments in favour of the near approximation, if not the identity, in their leading characters, of the systemic and the *true* menstrual blood as it issues from the parts which secrete

it; and tend strongly to prove, moreover, that the properties which are said to characterize *common* menstrual blood—namely, its want of power to clot, attributed to the absence of fibrin, its acid reaction, and its peculiar colour and consistence—are altogether acquired, and variously modified, by admixture with the vaginal mucus after the fluid has escaped from the uterine vessels.

I have met with a considerable number of instances of what appeared to be natural menstruation during pregnancy and the nursing period, wherein the crude fluid collected from the *ostium externum* was precisely similar, as believed by the patient herself, and so far as I was able to ascertain by careful examination, to that discharged under normal circumstances. On examining these cases with the speculum during the existence of the menstrual phœnomena, the blood was invariably found issuing from diseased surfaces situated upon or about the *labia uteri*, none escaping from the interior of the organ.

I have also met with a number of cases of pseudo-pregnancy, the enlargement depending upon a faulty circulation through the vessels of the uterine system, and consequent hypertrophy of these and the adjacent organs. The patients however believed themselves with child, having the abdomen enlarged, the mammæ developed, and experiencing what they considered to be the fœtal movements; but in whom menstruation was repeated at regular or irregular intervals. In these cases also, which, as well as those mentioned in the preceding paragraph, were generally attended with a form of leucorrhœa to be described in another chapter, the blood was seen oozing from ulcerated surfaces on the *labia*, the *os uteri* being closed and for the most part contributing no portion of the sanguineous product. In both these forms of spurious, or what may be termed vicarious menstruation, the blood could not of course be considered as of the true catamenial

character, yet it possessed subsequently all the sensible properties of the ordinary menstrual blood on its arrival at the *os externum*.

If blood that has been drawn from the basilic or some other vein, or collected from a scarified surface, be allowed to flow into a cup containing pure or diluted acetic acid, — the same acid which exists in a free state in the vaginal mucus, — in the proportion of one part of pure acid to sixty parts of blood, and if the acid be properly diffused through the blood; the latter will remain uncoagulated, and become of a darker colour if the blood be arterial, but lighter if venous, and no traces of uncombined fibrin can then be found in it. These experiments have been over and over repeated with the same results. But the following may perhaps be considered more in point.

If healthy systemic blood be allowed to flow into a cup containing a small quantity of healthy vaginal mucus, and the two be gently mixed together, the blood will remain uncoagulated, and, if the mucus be in sufficient quantity, no trace of uncombined fibrin can be detected in it. This conclusion was arrived at after the following experiments. 1st. Twenty drops of blood issuing from a scarified surface were allowed to fall upon the surface of a piece of glass, the temperature of which had been raised to that of blood. About seven grains of healthy vaginal mucus were then incorporated with the blood, the operation of mixing being accomplished as gently as it was possible. The mass appeared of the same colour as that of the blood before mixing. It did not separate, but remained a homogeneous fluid for an hour or two, when it became spongy, and subsequently dried, but gave no appearance whatever of separation. It had a slightly acid reaction. 2ndly. About ten grains of healthy vaginal mucus (collected by means of the speculum) were introduced into a small cup, into which a stream of venous blood was directed

to the amount of ten drams. The fluids were slightly stirred together by means of a skewer, to which, however, no fibrin adhered. The blood became a little lighter in colour after mixing. At the end of six hours it was a soft spongy mass, without a trace of separation. After twenty-four hours, it still remained a soft spongy coagulum, but without any appearance of serum. It was decidedly alkaline. The blood was evidently in too great proportion in this experiment, a circumstance which it was attempted to obviate in subsequent examinations. It was suggested also that the agitation used in mixing the two fluids might operate in hindering coagulation: this contingency is also provided for in the following experiments. 3rdly. Two small cups were provided of equal sizes. Into one were introduced twelve grains of healthy vaginal mucus; the other was empty. Four drams of venous blood were then allowed to flow into each cup, and both were agitated the same length of time, one for the purpose of mixing the fluids, the other with a view of ascertaining how far coagulation was interfered with by such operation. It was found however, that from some cause, perfect mixture of the mucus and blood could not be accomplished; small grey isolated portions of the former being visible in several parts of the fluid after the attempt to combine them had been made. The blood in each cup exhibited alkaline properties in an apparently equal degree of intensity. In eight hours the unmixed blood was perfectly separated into a softish-looking coagulum and a clear serum, which completely surrounded and covered the clot. That in the other cup had become a spongy mass, but showed no signs of separation. On the following day the separation of the unmixed blood was still more complete; and two or three drops of a transparent oily fluid appeared on the surface of the other, but could not be poured off from the clot. 4thly. The first experiment was again repeated, with the precaution adopted in the third,

respecting the agitation of a similar quantity of unmixed blood. The results were precisely the same in the case of the mixed fluid; it remained perfectly uncoagulated and was every way similar to ordinary menstrual blood: it exhibited an acid reaction. The other specimen was perfectly coagulated in from fifteen to twenty minutes, and at the end of an hour was quite separated. The relative proportions of mucus and blood used in this and the first experiment, I apprehend to be very nearly those of which the natural fluid is composed under normal conditions.

It appears then from what has now been stated, that the true menstrual blood, uncombined with any other product, is extremely like the circulating mass; consisting of the same elemental constituents, and observing the same habits under like circumstances. And, escaping from the uterus in the separated form before described, the small clots are immediately dissolved in the vaginal mucus, being thus enabled to pass off in an uninterrupted stream; the fluid at this period possessing properties very different from those of either of the products of which it is compounded. Here is observed one of those most wise and merciful provisions of the Great Creator and Preserver of all things, which so frequently strike the physiologist, in the course of his enquiries, with wonder and admiration! If no such solvent power existed as that now alluded to, the coagulated part of the menstrual secretion, being, on account of its consistence, necessarily more or less detained within the vaginal canal, would soon become as a mass of dead animal matter, of which the consequences would be awful in the extreme.

Source of the Menstrual Secretion.

The exact structure which secretes the menstrual fluid has long been a disputed question, and is one upon which physiologists are still far from being agreed. Some have asserted

that the function is performed entirely by the mucous membrane of the vagina. This idea, which is now pretty generally exploded, was founded upon the occasional existence of menstruation during pregnancy, and also upon certain appearances said to have been observed on post-mortem examination of such and some other cases. On the inspection of persons who have died during menstruation, it is recorded that the vagina, throughout its entire extent, has been found covered with blood, the *os uteri* being at the same time closed, the lining membrane of the uterus dry, with a total absence of all signs indicative of any recent escape of blood from the interior of the organ. Such appearances may have been encountered, having no other connection with the menstrual function save that of furnishing a compensating discharge under conditions of morbid plethora during pregnancy; or in states of congestion and consequent suspension of the natural discharge when pregnancy does not exist. Under such circumstances hœmorrhage may take place from the vaginal membrane as from any other organ of the body, and is the more likely to occur indeed from this part, since the vascular excitement which the sexual organs experience during the menstrual or other accidental accumulation, is extended in an especial manner to this structure. But whenever such condition is found to exist, it must be regarded as a deviation from an established rule, and indicative of disease. I have frequently noticed the exudation of blood from warty excrescences and abrasions of the vaginal membrane during the menstrual period, but never from the healthy structure. Vicarious discharges frequently occur also from the lower and external part of the uterus when in a state of ulceration: this circumstance is not mentioned by the advocates of the above theory.[1]

That the menstrual fluid under normal circumstances, is

[1] See Dict. de Medicine; art. Menstruation.

not, in any degree, furnished by the vaginal mucous membrane (except in so far as its mucus forms an accidental constituent,) but flows into this cavity through the *os uteri,* there cannot be a doubt, as may be proved by facts of constant occurrence. In cases, for instance, where it is found necessary to support the uterus by means of the cup-shaped pessary provided with a hollow stem, the blood, during menstruation, passes almost entirely through the instrument, very little escaping along its outer surface, and the portion that does escape in this manner consists doubtless, of dissolved coagula which the openings at the upper part of the instrument are too small to admit; and portions of grumous blood are frequently found adhering to this part of the instrument on its careful withdrawal from the cavity. The blood escaping through the stem of the pessary invariably exhibits an alkaline reaction.

But the fact is further proved by ocular demonstration. I have witnessed in numerous instances the menstrual blood issuing from the *os uteri,* the *labia, cervix,* and all the vaginal surface being perfectly normal, and furnishing no such product. Some of these observations were made upon females affected with *procidentia uteri;* but in the majority the information was obtained by means of the speculum. In a case of persistent retroversion of the uterus (published in the *London Medical Gazette,* for Sept. 1844,) wherein there was permanent extrusion of nearly the whole organ and the vagina, rendering the employment of the catheter for a length of time necessary, there being also considerable hypotrophy of the cellular structure surrounding the urethra, the phænomena of menstruation were frequently noticed. During the flow of the menstrua the vaginal membrane always became unusually suffused, but never exuded blood. The fluid escaped entirely from the interior of the uterus, often in a state of partial separation as before described, in form of a red serum

of variable consistence, accompanied from time to time by small, compressed coagula; the whole constantly exhibiting alkaline properties.

A question which has been a good deal agitated of late years, and one possessing a high degree of interest, physiologically viewed, relates to the functions of the ovarian bodies and the manner in which they appear to be concerned in the development of the menstrual phænomena. It has long been believed that ova were matured and occasionally detached from the ovarium, and passed off by the uterus, independantly of sexual intercourse, and that such separation occurred especially during, or immediately previous to the commencement of the menstrual period. The fact was noticed by Kirkringius as early as the year 1673; and afterwards by Cruikshank, in a paper published in the "Philosophical Transactions," more than sixty years ago. The subject had not received particular attention however, until very recently, when it was taken up by Dr. R. Lee, Mr. Girdwood, and others in this country; and by Gendrin, Negrier, Bischoff and Raciborski, on the Continent, with equal energy and success; and not a little discussion, with some angry disputation as to priority of discovery, has from time to time appeared before the public. I deem it unnecessary to do more than allude to matters of this nature in passing, feeling confident, that he to whom the honour is justly due, will ultimately receive it.

That the ovaries perform an important office in connection with menstruation is evident from the fact that in cases where these organs are wanting, or where they have been removed by operation, or destroyed by disease, the function is never discharged. The body is different in its external characters from that of the female generally; the breasts remaining undeveloped where the imperfection happens to be congenital, and shrinking down in others to the size observed in the

male; the voice is husky, the stature small, the pelvis contracted, and no sexual desire is ever experienced.[1] On the other hand, in cases where the uterus has been wanting, and the ovaria have been present and fully formed, women have usually experienced violent pains within the pelvis every month, and all the symptoms of menstruation have been present except the discharge.[2]

It has been satisfactorily shown in numerous instances, that rupture of ovisacs and discharge of ova are generally observed at each menstrual period; although the two are not necessarily co-existent. This separation, which is a purely organic act, occurring without the consciousness of the individual, consists in the sudden rupture of the attenuated peritoneum covering the raised part of the ovarian vesicle, and the forcible projection of its contents, including the ripened ovum, into the Fallopian tube, through which the whole is conveyed to the uterus. A discharge of blood either from the torn vessels at the surface or from those ramifying upon the deeper part of the sac, immediately ensues, constituting, according to some, the commencement of the menstrual effort. The occasional presence of a quantity of coloured serum in the Fallopian tubes in persons who have died while the menstrua were flowing, has suggested the ruptured ovisac as the probable source of the discharge at all times. The limpid contents of the vesicle undoubtedly pass through this channel immediately after their escape; but that a stream of blood issues at any time from this source into the uterine cavity is extremely unlikely, and seems indeed physiologically impossible. If hœmorrhage ensue upon the rupture of an ovisac at one

[1] See a case by Mr. C. Pears, published in the Philosophical Transactions, 1805; Mr. Nourse's case of Ovarium Hernia, in Pott's Works, by Earle, vol. ii. p. 210; Case of Scrofulous Degeneration of the Ovaria, related by Dr. R. Lee in his Lectures published in the London Medical Gazette, vol. xxxi. p. 165. [2] Dr. R. Lee; ibid.

time, a similar phænomenon ought, by parity of reasoning, to follow upon the same cause under all circumstances; yet how often must ovular separation occur during the sexual orgasm and at other times, when no such discharge is observed to follow. The recent observations of Dr. Ritchie, of Glasgow, appear to prove, in a manner scarcely admitting of dispute, that ova are matured and separated from the ovarium long before the advent of puberty, and even during childhood. In cases of absence of the uterus, moreover, or where the Fallopian tubes happen to be impervious, the ovaries being fully developed and active, the maturation of ova must be presumed to be accomplished, and their occasional escape into the abdominal cavity be inferred from the indications before-mentioned. In such instances, although the presence of a mere speck of matter like an ovum in the abdomen might create no inconvenience, a continuous effusion of blood would in all likelihood be attended with the most serious consequences. It is very probable that no more blood is effused from the vessels of the ovisac, after the evacuation of its contents, than is sufficient to occupy the vacant cavity; and that the red fluid which the Fallopian tube, on post-mortem inspection, has been occasionally found to contain, is the product of the uterus, whence it passes, by capillary movement after death, towards the abdominal cavity.

There is no doubt that the menstrual blood, under normal circumstances, proceeds entirely from the inner surface of the uterus, and that every part of the organ, including the upper portion of the *cervix*, is perhaps equally engaged in the performance of the function. This proposition is substantiated by the following case, showing the appearance of the uterus and its appendices of a virgin, who died at the age of seventeen years and five months, from the exhaustion consequent upon menorrhagic menstruation. The patient had the lymphatic temperament strongly predominating, with fair com-

plexion, smooth, waxy skin, and possessed a considerable degree of nervous irritability: conditions eminently favourable to the developement of the hœmorrhagic diathesis. She began to menstruate favourably at thirteen years of age, from which epoch the function was regularly performed, the discharge continuing about four days at each return; and the health was unexceptionable until within a short time of her death, which occurred in March, 1845. On a frosty day in the previous December she fell down in the street, by which she was severely shaken, but received no other injury. In ten or twelve days afterwards, being the natural menstrual crisis, she began to menstruate in the usual manner. For several days previously she had experienced a great degree of languor, accompanied by alternate rigors and feverish reaction, and on the second day of the catamenial period, under the influence of fatigue, she sat down on the step of a street-door, after which she became unable, for some days, to resume her employment. The menses continued to flow the usual length of time; but when the discharge should have ceased, it became a profuse hœmorrhage, passing away in clots. This was arrested in the course of five or six days by the aid of medicine, leaving the patient, however, considerably reduced; but in ten or twelve days more the health and strength were so far restored as to enable her to resume her duties as a factory operative. The menses on the succeeding occasion, which happened at the beginning of February, and about six weeks after the accident, were in great abundance, the discharge being occasionally mixed with clots, and continuing without ceasing sixteen days. On the 2nd of March, being the third natural period since the accident, the menses again appeared. For the first two or three days the discharge bore the usual characters, and was moderate in quantity; it now however, gradually increased, and again assumed the form of an alarming hœmorrhage which the prompt administration of

remedies failed in the slightest degree to relieve. She died from exhaustion on the 15th of the same month, the bleeding having ceased about twenty-four hours before death.

An early post-mortem examination discovered no organic lesion in any part of the body, which was everywhere drained of blood. The uterus was rather larger than natural; its parietes were less firm, but nearly of the usual thickness. Its interior contained a clot of blood which occupied the entire cavity. This clot, which was an exact mould of the uterine cavity, measured, from its lower extremity which terminated at the *os tincæ,* to the part situated at the *fundus uteri,* two inches and a quarter; and between its two horns, one inch and three quarters. Each horn had a rounded extremity, was semi-transparent and fibrinous, and terminated at the corresponding Fallopian orifice. The Fallopian tubes were perfectly empty, and of the natural dimensions. The right ovarium was a little larger than the left, and presented several distinct cicatrices in different stages of reparation. One of these was recent, depressed, puckered, and appeared at first sight to have an opening in its centre; but it was afterwards found to be impervious. The cavity over which this was situated was occupied by a firm, reddish coagulum, traversed by yellow striæ, having an irregularly concentrical arrangement. Immediately beneath the next most distinct cicatrix was a firm yellow body, smaller in size than the preceding, and less striated. Another paler formation of a similar kind, but still smaller and more deeply seated, and marked by a faint indentation of the surface above it, was observed in the same ovary. There were also two vesicles of different sizes containing a thinnish glairy fluid, one of which was near the surface.

The left ovarium presented on one of its sides a large bluish vesicle, projecting its peritoneal covering considerably above the surrounding surface; this was the size of a small

hazel nut, and contained apparently nothing but serum. Two smaller vesicles more deeply seated, and two well-marked yellow bodies of different dimensions having corresponding cicatrices, were also observed in the same ovary.

The *labia* and *cervix uteri* were perfectly healthy. The inner surface of the uterus presented numerous openings scattered over every part of it, obvious to the naked view, some being sufficiently large to admit a good-sized bristle, or the end of a lachrymal probe. The largest and most numerous were at each side of the fundus near the horns of the uterus, and at the contracted part of its body near the commencement of the cervix. The openings had a valvular arrangement, a great number passing downwards towards the cervix, while those at the upper part of the organ appeared to pass towards the Fallopian orifices.

The preceding case is interesting in a physiological point of view: 1st, in indicating the precise part of the uterus whence the discharge issued, and inferentially also the part which commonly furnishes the catamenial product; there being no doubt that the blood, the loss of which occasioned the death of the patient, escaped entirely from the openings now noticed; and that the hœmorrhage, from beginning to end, was merely an exaggerated menstrual discharge, passing away, when in considerable abundance, in the clotted form; but being occasionally in smaller quantity, at which times it was not clotted, but assumed the general characters of the normal menstrual fluid; 2ndly, the appearances described seem to suggest the *manner* in which the menstrual product is separated ordinarily from the circulating current; namely, by simple exudation from the arterial capillaries in communication with the valvular orifices naturally existing upon the inner surface of the uterus. The question of exudation, as applied to the manner in which the catamenial product is separated from the blood, in contradistinction to secretion

(by which is meant the elaboration of a product different in character from that which furnished it) is strengthened by the appearance which the inner surface of the uterus is said to exhibit in persons who have died during menstruation; small portions of grumous blood being found attached here and there, more of which may be made to ooze out by pressure, making its escape from numerous vascular openings interspersed over the whole extent of the lining membrane.

Spurious menstruation is a term which may be appropriately used to denote a class of symptoms already briefly alluded to, consisting in the developement of the menstrual phænomena during pregnancy and lactation, and in certain states of morbid plethora of the uterus and surrounding organs; involving loss of balance in their circulatory system, with (in the latter instance) partial or total suspension of the normal catamenial function. Under whichever of these conditions occurring, it is invariably associated with a morbid state of parts situated external to the uterine cavity, generally of its *cervix* and *labia;* sometimes of a portion of the vaginal mucous membrane. Its existence during pregnancy will be more particularly noticed hereafter.

Spurious menstruation occurring in the absence of pregnancy is accompanied with enlargement of the abdomen and of the mammary glands, nausea and occasional vomiting, alternate rigors and flushes of heat, languor, loss of rest, precarious appetite, and other symptoms tending to encourage a suspicion of the existence of pregnancy. The abdomen is sometimes enormously and painfully distended, as if caused by accumulation of flatus, and then suddenly subsides, but seldom to the dimensions of the unimpregnated state; there is constant aching of the loins, hips, and hypogastrium; a sense of bearing-down, and inability to retain the urine the ordinary length of time. Pressure of the distended parts upon the large arterial trunks produces a sensi-

ble throbbing over the whole region, which, together with the visceral movements consequent upon the shifting of the confined flatus from one portion to another of the lower bowel, strengthens the belief in the existence of a fœtus in utero; and it is often a very difficult matter to convince the patient, under such circumstances, that she is not with child. The repetition of menstruation at regular intervals will frequently not be received as negative evidence; and should there be any deviation in the recurrence of these phænomena, or the discharge be altered in appearance, (not at all an uncommon consequence of the condition of parts under which they happen,) the difficulty is still further increased. The following cases will serve to illustrate the state now alluded to more fully than it is possible to do by a general description.

Case I.

Pseudo-pregnancy; granulating ulcer of the labia uteri; purulent leucorrhœa; regular menstruation; bearing-down; recovery.

Sarah Neale, a married woman, twenty-six years of age, was admitted a patient of the Manchester Lying-in Hospital in January, 1846. She had borne two living children at the full term of gestation, and subsequently, one still-born at the end of the seventh month. At the time of her admission she stated herself to be in the seventh month of her fourth pregnancy; and sought relief at this period for an abundant leucorrhœal discharge which had existed ever since her miscarriage, and which she believed to be the result of a gonorrhœal affection, contracted from her husband, when between five and six months advanced in that pregnancy. To this cause she referred her premature delivery. Although nearly seven months advanced, she had felt the fœtal movements only very slightly and at long intervals; and she had menstruated regularly every month during the whole period, the

discharge being precisely the same both as to its appearance, the number of days during which it continued, and the attendant symptoms, as when not pregnant. She complained of unusual weight and fulness of the abdomen, a fixed pain of the right hypogastrium, constant aching of the loins, and a sense of bearing-down. The vaginal discharge which, in the absence of menstruation, was a yellowish matter, communicating a deep stain to the linen, exhibited a faint acid reaction, but was sometimes decidedly alkaline. The abdomen was of medium size, somewhat larger on the right than on the left side, and the skin appeared a good deal loaded with adipose deposit. The mammary glands were enlarged, and the areolæ and follicles more than ordinarily distinct. A tumour, which appeared to be the uterus, was sufficiently palpable above the pubis; but no fœtal impulse was communicated, on careful manipulation, to the hand; nor could the placental *soufle* or the beat of the fœtal heart be detected. To the touch, the uterus, although somewhat enlarged, was loose and floating; its cervix hard and hypertrophied, and the *labia* expanded and irregular. Examined with the speculum, the *os uteri* was found perfectly linear, and closed; the whole circumference of the *labia* was one mass of granulations of a purplish colour, covered with pus, and exuding a little blood from several points, caused probably by temporary pressure of the instrument. The adjacent vaginal reflection was thickened and varicose. My opinion was at once given that pregnancy did not exist, which, however, the patient was unwilling to believe.

During the following menstrual crisis I examined the parts again with the speculum. The ulcerated surface was covered with blood, which, being carefully removed by means of lint, the parts were brought more distinctly to view. The *os uteri* was still completely closed, and gave no escape to any fluid; but the diseased parts were again covered with a san-

guinolent exudation, and this was repeated as often as the produet was eleared away; the uterine orifiee still remaining elosed and free from diseharge as before. A eourse of alterative medieine, with repeated small bleedings by leeehes from the hypogastrium, and, subsequently, the applieation of nitrate of silver to the uleerated surfaees, effeeted a eomplete eure. The abdomen gradually subsided, the pain and bearing-down disappeared, and the menstrual funetion was restored to its normal state.

Case II.

Pseudo-pregnancy; induration and fissured ulceration of the labia uteri; purulent leuchorrhœa; irregular menstruation; recovery.

Mary Ryeroft, aged twenty-nine, of the sanguine temperament, was admitted for treatment January 30th, 1846. She represented herself to be seven and a half months advaneed in her fifth pregnancy. Her previous pregnaney terminated in an abortion at the end of the third month, for whieh no eause eould be assigned, exeept that she had been in a delieate state of health during the whole period, of whieh the prineipal symptoms were, languor, alternate ehills and feverish heats, aehing of the loins, a deep-seated smarting pain of the hypogastrium, prineipally on the right side, sense of bearing-down, and a eopious leueorrhœal diseharge of a purulent eharaeter. She stated that she had suffered under the same train of symptoms during the whole of the existing pregnaney, especially the vaginal diseharge and bearing-down, whieh had beeome aggravated. Aeeording to her own aeeount she had felt the fœtal movements distinetly, and sometimes vigorously, nearly three months, and asserted that she had felt them sinee her arrival at the Hospital. These partieulars would probably have been reeeived without further inquiry, had she not mentioned that menstruation had been

regularly repeated throughout the whole period. She menstruated, commonly, with great pain of the loins; and this difficulty had attended each accession in the ordinary way during the present alleged pregnancy; but the discharge, which continued the usual number of days, had of late been paler and less in quantity than formerly.

The abdomen was as large as that of a person in the eighth month of pregnancy; although, on carefully manipulating, no uterine tumour could be detected, nor could the placental sound, or that of the fœtal heart be heard. The uterus felt small, light, loose, and floating; its lower extremity was indurated, enlarged, and irregular. The speculum revealed the existence of extensive disease of these parts. The anterior *labium uteri* was enlarged, and projected in a conical form below the level of the posterior, but its surface was free from abrasion; the posterior labium was divided in its middle by a deep ulcerated fissure into two mamillary projections, which were isolated from the anterior part by a similar fissure at each *commissura labiorum*, from all which a quantity of blood exuded during examination. The patient was pronounced to be not pregnant.

The speculum was again used during the succeeding menstrual period, on the second day after its commencement. The blood was seen freely oozing from the ulcerated fissures; a little exuding, apparently, from the *os uteri;* but it is not certain that this proceeded from the interior of the uterus, since the fissures involved a considerable portion of the substance of the cervix, to a depth which could not be fully observed by this means of examination. The plan of treatment pursued was precisely similar to that mentioned in the preceding case, except that the nitrate of silver, especially its concentrated solution, was more freely and more frequently applied in this case than in the former. In five weeks the abdomen was reduced to its natural unimpregnated size; and

by the end of April, about three months from the commencement of the treatment, the lower part of the uterus had regained its normal appearance, the patient having expressed herself perfectly well several weeks previously.

Case III.

Indications of dropsy; alleged pregnancy; profuse menstruation; purulent leucorrhœa; varicose ulcer of the anterior labium; restoration.

Mrs. L. aged twenty-eight years, of the lymphatic temperament, was removed to this town from an agricultural district in June, 1845, labouring under symptoms of abdominal dropsy. She had borne, at the full term of gestation, three living children, of whom the youngest, at the above-named date, was two and a half years old. From the period of weaning this child, she menstruated for a length of time monthly, as she had formerly done, the discharge continuing four days at each return. Eight or nine months previous to her application for treatment, an imprudent exposure to the weather during the menstrual period, suddenly and prematurely arrested the discharge. This was attended by a severe rigor, to which succeeded swelling and tenderness of the abdomen, and fever. The treatment, as described by the patient, was not active, but consisted principally in the application of poultices and the exhibition of aperient medicines. The symptoms gradually merged into the chronic form, the fever and pain becoming considerably diminished; the abdomen, however, continued to enlarge, accompanied with a sense of unusual fulness and pressure in the pelvic region. Five weeks after their cessation the catamenia reappeared, and continued in great abundance, being sometimes clotted, for twelve days; the discharge then diminished in quantity, becoming at the same time pale and watery, in which form it existed seven or eight days, when a profuse flow of the menses recurred.

After a week's duration this was replaced by a yellow vaginal discharge in nearly equal abundance, and which continued about the same length of time. In this manner the catamenial and leucorrhœal discharges occupied alternate weeks during several months, the health being all the while in a very feeble state.

When first I saw this patient her prevailing idea was that she laboured under abdominal dropsy; and she had, also, (notwithstanding the abundant evacuations above-mentioned which had continued unabated hitherto,) been prevailed upon to believe that she was pregnant. The abdomen, which was as large as that of one in the ninth month of pregnancy, was tense and painful, rendering it impossible to obtain, by manipulation, any satisfactory information respecting the condition of the subjacent organs. There was distinct fluctuation in the hypogastric region. The umbilicus was a little prominent, the mammæ enlarged, the areolæ dark. No placental or fœtal pulse could be detected. The body of the uterus, *per vaginam*, seemed somewhat enlarged, but light, and easily moved from side to side; the cervix was thickened; the *labia* indurated; the anterior *labium* especially being greatly hypertrophied and irregular. On specular inquiry this last-named part was found to be occupied by a large, purplish-looking, varicose ulcer, covered with pus, and exuding a little blood, which was caused, doubtless, by pressure of the instrument. The *os uteri* was closed and linear. The posterior *labium* was hypertrophied, but free from abrasion.

On examining these parts a few days afterwards, during the alleged menstrual crisis, the blood, which was stated to be passing away in the usual manner, was seen to issue *entirely* from the ulcerated surface in question, none whatever escaping from the interior of the uterus through the *os tincæ*. She was pronounced not pregnant.

The treatment consisted in small bleedings from the hypo-

gastrium, repeated at intervals of five or six days; and in the administration of five grains of Plummer's pill with half a grain of opium every night, and a dose of a mild saline aperient twice daily. At the end of seventeen days, the bleeding having been four times practised, all peritonitic symptoms had disappeared; the abdomen was considerably reduced in size, softer, and not painful except when firmly pressed upon, and the leucorrhœal discharge and sense of bearing-down were greatly relieved. The uterine ulcer appeared more healthy and much less extensive, although no application had hitherto been made to it, and the spurious menstrual evacuation, which occurred at the latter part of this period, was considerably less in quantity, and occupied only three days in its duration. Depletory measures being considered no longer necessary, and the mercurial alterative being also discontinued, a tonic plan of treatment, consisting in the administration of two grains of Iodide of Iron, combined with an equal quantity of the Extract of Cinchona, night and morning, and a draught of the compound decoction of Sarsaparilla, twice daily, was now entered upon. The ulcerated surface was at this period freely treated with a strong solution of Nitrate of Silver; the operation being afterwards repeated once a week for several weeks. In eleven weeks from the commencement she was perfectly well; the abdomen having regained its natural dimensions, and being free from any uneasiness whatever; the lower part of the uterus was restored to its normal state, and there was no longer any vaginal discharge except the natural organic product occurring at its proper periods.

CHAPTER II.

CONDITIONS WHICH PRINCIPALLY INFLUENCE MENSTRUATION AT ITS COMMENCEMENT.

Age of Puberty.

The period of life at which menstruation commences, is widely different in different individuals; depending upon a variety of causes of whose relative value it may be difficult to form a just estimate. The particular character of all fundamental changes which the constitution experiences at certain critical stages of life, is undoubtedly determined, principally, by the temperament of the individual; that is to say, by the relative degree of efficiency with which the different organic systems of the body discharge their respective functions, and the mode in which these affect or become in turn affected through the operations of the mental faculties. For the enjoyment of perfect health, it is obvious that each organ should be in such a state of completeness, both as to structural developement and functional energy, as to be capable of sustaining the share of duty assigned to it without interruption or difficulty; — all working in harmony together to the accomplishment of that most estimable of temporal blessings, "mens sana in corpore sano."

Deviations however from this desirable balance,—the result of ill-assorted marriages, intemperate habits, or disease, are of so frequent occcurrence as to constitute rather the rule

than the exception to this general position. For instance, derangement of the absorbent system so induced often lays the foundation of scrofula; deficiency in the arterial capillary power may determine the cachectic habit, a state of body eminently fitted for the implantation of disease of any character; want of tone in the venous system predisposes to local accumulations; defective power in the exhalent functions is the common precursor of dropsical effusions; and the impairment of the pulmonary, gastric, hepatic, and renal organs are, respectively, the functions failing in persons who become eventually the subjects of asthma, gout, jaundice, and stone.[1] The existence of any of these conditions, which, in whatever way originated, are often transmitted, from parent to child, through several successive generations, may influence the function of menstruation at its onset in a very important manner; in some instances predisposing to a precocious puberty, in others delaying its advent several years beyond the average age of sexual developement, and in all cases rendering the system pre-eminently susceptible of morbid action at this critical period of life.

Various external agencies, moreover, although perhaps of subordinate importance, exert an influence over the changes of puberty, favourable or otherwise, according to their nature, severity, and mode of application. Of these, occupation, habits and pursuits, attacks of disease and the remedies employed in their treatment, and other fortuitous circumstances, are among the most important. It is generally believed also, that climate has considerable effect in retarding or promoting the advent of puberty; the phænomena appearing earlier in tropical countries than within the more temperate latitudes.

The following table exhibits the respective ages at which menstruation commenced in four thousand females, including

[1] See Travers on Constitutional Irritation.

women of all classes of society indiscriminately met with in private and public practice. When the age of an individual happened to be less than eight months above a certain year, the case was placed under the preceding whole number; when more than eight months, under that following.

TABLE I.

Showing the age at which puberty was accomplished in four thousand individuals.

At the age of	10	years,	9	first menstruated.
„	11	„	26	„
„	12	„	136	„
„	13	„	332	„
„	14	„	638	„
„	15	„	761	„
„	16	„	967	„
„	17	„	499	„
„	18	„	393	„
„	19	„	148	„
„	20	„	71	„
„	21	„	9	„
„	22	„	6	„
„	23	„	2	„
„	24	„	1	„
„	25	„	1	„
„	26	„	1	„
		Total	4000	

Average age of the first menstrual crisis, fifteen years and nearly seven months.

In investigations of this nature it is evident that a considerable number of inquiries is necessary for the purpose of forming a correct estimate, as, often, one group consisting of a few hundreds will furnish results very different from those

obtained from another of similar amount. This is abundantly evident in the subjoined arrangement, in which the cases already mentioned are given in four equal portions, placed exactly in the order in which they were met with. The difference appears still more striking when the numbers are still further subdivided.

Table II.

Showing the age of menstruation in those comprised in the preceding table, arranged in four successive groups of one thousand each.

		Collective Ages.	Average age of Puberty.
First	1000	15,369½ yrs.	15 yrs. and 4½ months.
Second	1000	15,816½ yrs.	15 yrs. and 9¾ months.
Third	1000	15,474½ yrs.	15 yrs. and 5⅔ months.
Fourth	1000	15,602½ yrs.	15 yrs. and 7¼ months.
Total	4000	62,263 yrs.	15 yrs. and 6¾ months.

After infancy and early childhood, the female system is in a state far more favourable for the propagation or developement of diseased action than at any other period of life, excepting of course that of utero-gestation and the puerperal state. This is borne out by the fact that a vast proportion of those organic affections which most commonly lead to fatal consequences, date their commencement from this crisis of life. Of the four thousand individuals comprised in the preceding tables, 892 or 22·3 out of every hundred accomplished the changes of puberty with difficulty, suffering under some form of disease, consequent upon undue retention of the menstrual discharge, after the other physical signs of puberty had set in. This number does not include those milder forms of amenorrhœa which, generally speaking, give way readily under the employment of ordinary domestic medicine; but consists

of cases of disease requiring in their treatment the active employment of remedial measures. A considerable number were cases of a very grave description, resulting in organic or other forms of disease of a persistent character, and, in a few instances, running on to a speedy and fatal issue.

Abstractly considered, the age best adapted for the favourable developement of puberty, must be that at which the event most frequently occurs under ordinary circumstances; we accordingly find that, at the ages of fifteen and sixteen years, the proportion of cases in which the change is accomplished with difficulty is considerably less than that in any other period of similar extent, as will appear below. The diseases encountered also at the ages now specified, are generally of milder type, of shorter duration, and, for the most part, more manageable than those met with at later or earlier periods.

Table III.

Giving the number of cases in which puberty was accomplished at four different epochs, into which the range of ages constituting the first menstrual climacteric has been divided, and the proportion of unfavourable cases encountered at each epoch respectively.

	Total No. of Cases.	No. of unfavourable Cases.	Per-centage of unfavourable Cases.
1*st Epoch;* including the ages of 10 to 14 years	1141	224	19·63
2*nd Epoch;* the ages of 15 and 16 years.....	1728	324	18·75
3*rd Epoch;* the ages of 17 and 18 years	892	247	27·69
4*th Epoch;* 19 years of age and upwards.....	239	97	40·58
Total.....	4000	892	22·30, av.

A precocious puberty is most commonly observed in those possessing the sanguine temperament prominently developed, and in those who exhibit that delicate organization of structure which so readily merges itself in the diathesis of scrofula. On the other hand, puberty is liable to be long protracted in lymphatic subjects, and in those having the peculiar combination of this and the bilious, constituting the melancholic temperament of the older writers. In both the latter forms of constitution, the circulatory power appears to be below par, with the co-existence of defective nervous energy. The most favourable combination is that which results from a certain mixture of the sanguine and bilious temperaments, in which form the functions, generally, are healthily and vigorously performed, and are continued unimpaired through the longest period.

Of the influence of temperament and habit of body in determining the character of disease in difficult Menstruation.

The doctrine of the temperaments has long formed a subject for philosophical disquisition, and in reference to which various theories have at different times been promulgated. The earliest hypothesis was derived from that of Democritus, concerning the elemental constitution of the earth, a theory founded upon the atomic system of his master, Leucippus, who imagined the existence of four cardinal principles, into which it was supposed the whole universe was resolvable. This comprehensive category recognized an Earthy element as the prime basis of all terrestrial objects; a Watery element, the presence of which rendered the former capable of separation from its original state of chaotic confusion, and of arrangement into organic form and order; the element of Air was considered as the passive agent of vitality; and that of Fire as the *primum mobile*—the grand motive principle by which matter was brought into active existence, and made to

assume all the varied forms under which Nature, whether animated or quiescent, presents herself to the cognizance of the senses. This doctrine, which, however defective it may appear as compared with the existing state of knowledge, is not destitute of beauty and simplicity, was eagerly adopted by Hippocrates, who ingeniously applied it to the erection of a system of medical philosophy which prevailed, with but little alteration, for fifteen hundred years afterwards. He considered the human body as constituted of certain humours resulting from the various combinations of the four primary elements above noticed, and which, in their nature, were either hot, cold, dry, or moist. The equable distribution of these humours was considered necessary for maintaining the body in a temperate condition, or in health; hence the origin of the word Temperament. Disease, according to this theory, consists in the excess of one or other of these principles; and when such a condition becomes permanent, or exists naturally, the person is said to possess a particular temperament. Thus the choleric, melancholic, phlegmatic, and a multitude of mixed temperaments were defined, to which was subsequently added the sanguine constitution, each being attended by certain external traits or properties with which it was thought to be invariably associated.

The extraordinary propensity to jump at general conclusions, which manifestly prevailed with most observers of former ages, soon led to the extension of the Eleatic philosophy to all animated nature. Thus, for the purpose of rectifying any vitiated condition of the "four cardinal virtues" of the human body, the whole vegetable kingdom was found to be arranged under four separate heads, possessing as many distinct sets of properties; and each group was again discovered to be composed of articles whose properties were offered in the first, second, third, and fourth degrees of intensity, to suit every possible contingency of disease or difficulty. We

are accordingly recommended to make use of the "four greater hot seeds," to "thin the humours, open the pores, and take away obstruetions," in eonstitutions of the cold temperament; of the "four greater cold seeds" for disorders oceurring in those of the hot temperament, "to drive back the matter, stop defluctions, to make thick the humours, and to limit the violenee of choler;" and so on in quaternary order throughout the whole system. Paraeelsus, who, among the multitude of absurdities and impositions of which he was guilty, has, nevertheless, enriched our *materia medica* with articles which have since proved of the highest value in chemical and therapeutical scienee, rejoieed in being able to enlarge the catalogue of remedies by the addition of four agents from the mineral kingdom, namely, salt, sulphur, earth, and mercury; considering their intrinsic virtues of subordinate importance as compared with the order in which they were marshalled forth into the ranks of science.

It is not my purpose to inquire how far the notions at present entertained in reference to this subjeet, accord with, or deviate from the principles now glanced at; it is sufficient to know, that whatever improvements may have been attempted in modern times, the system has in no way been rendered more available thereby for useful purposes. The remarks which follow are the result of observations upon eertain forms of uterine disease which, invariably attaeking the same part of this organ, and implieating the same tissues, appear also to exist under eireumstanees every way similar in different individuals, and to owe their origin to similar eauses. The intention was to aseertain in what manner morbid aetion, as exhibited in these affections, appeared to be influenced by eonstitutional peeuliarity.[1]

The *sanguine* temperament is distinguished by red or

[1] In making such allusion as may be thought necessary to those constitutional peculiarities which appear to be mainly conducive in determining the

auburn hair, blue or brown eyes, florid complexion, thin, soft skin, through which the blood-vessels, which are comparatively large and numerous, are seen ramifying. Upon being closely viewed the surface appears to be always covered by a perspired moisture, which exudes much more freely in this than in other complexions, owing, probably, to the peculiar arrangement of the capillaries. The exhalent pores are liable to become obstructed by sebacious accretions, constituting the *acne punctata*, which so much disfigures the features in some persons of this temperament. The animal heat is generally high; the pulse full and frequent; the body well-proportioned; the stature tall, with an inclination to corpulency; with which are associated an active mind, lively and cheerful disposition, with warm and passionate feelings.

Puberty is, generally speaking, early developed in women of this conformation; the child-bearing period is compara-

precise nature of the class of pathological phænomena of which any particular conformation may be susceptible, it is not my intention to enter into a discussion upon the relative merits of the numerous conflicting theories which, from time to time, have prevailed relative to the doctrine of the temperaments. The essential attributes referred to, in the present day, in distinguishing between different races of mankind, as well as in recognizing individual deviations constantly seen to arise spontaneously, or as the result of intermarriages between different tribes and families, are quite in accordance with the Hippocratic doctrine; and the various modifications suggested in later times by Hoffman, Haller, Soemmering, Cabanis, Hallé, Gregory, and other eminent physiologists, consisting in additions to, or in refinements upon the old theory, are fundamentally the same. With these the reader is supposed to be already sufficiently acquainted. It may be remarked that external physical traits do not always lead to a correct recognition of the temperament, the pathological tendences proving this to be sometimes of an opposite nature from that which outward appearance would suggest.

For a comprehensive detail of the history of the temperaments, the reader is referred to Dr. Bostock's "Elements of Physiology," vol. 3; to the article Temperament, by Dr. Prichard, in the "Cyclopædia of Practical Medicine;" and to that by Adelon, in the "Dictionnaire de Medecine." This subject is very ably discussed also in a work recently published, entitled "The Brain and its Physiology," by Mr. D. Noble.

tively short, but fruitful; and they cease to menstruate at from thirty-seven to forty-five years of age. The menstrual discharge is for the most part scanty, occupying a period of rather less than the ordinary duration.

The sanguine temperament predisposes to acute inflammatory affections, implicating particularly the serous and mucous membranes, and the parenchymatous textures of organs; and also to some obstinate forms of cutaneous disorders. In retarded or suppressed menstruation, symptoms of local plethora are early manifested, but are often opportunely relieved by compensating evacuations, of which such constitutions are readily susceptible. Periodical discharges of blood from the nose, mouth, lungs, alimentary canal, and other parts of the body; diarrhœa, vomiting, catarrhs, abscesses; are among the symptoms of a vicarious nature most frequently met with.

The *bilious* temperament is supposed to be conjoined with some peculiar condition of the chylo-poietic organs, especially the liver, predisposing to derangement of these parts. There seems to exist, at certain times, a particular liability to diversion of the biliary secretion into the circulating current, unattended, apparently, by organic derangement; the yellow pigment being deposited upon the colouring layer of the skin, to which it communicates the tint so characteristic of this form of constitution. It is indicated by a dark, swarthy, sometimes a slightly ruddy complexion; black, hazel, or grey eyes, which often possess an unusual brilliancy; the hair is brown, black, or dark auburn, coarse, crisp, and profuse in growth. The organs generally are strongly developed, the thoracic and abdominal cavities ample and well-proportioned; the muscles, though small, are remarkably firm and active; the circulation is vigorous, the pulse full, free, and moderately frequent; the skin thin, and the superficial veins large and prominent. The stature is generally of the middling

order, with an inclination to a medium degree of corpulency. With these traits are commonly associated the leading indications of a strong and comprehensive mind, eminently adapted to the prosecution of the more active and intellectual pursuits of life.

The bilious, or, as it was expressively denominated formerly, the choleric temperament, predisposes to diseases of the digestive organs, to visceral obstructions generally, and to urinary and calculous disorders. The more usual consequences however, of retarded or suppressed menstruation depend immediately upon a faulty circulation through the portal system of vessels, giving rise to congestion of the liver, spleen, and neighbouring organs, and resulting frequently in serious functional disturbance, as hœmorrhage from the nose, lungs, stomach, and other parts of the alimentary canal; and sometimes in organic disease. There is violent pain of the back part of the head, and of the loins, or sacrum; a dull, deep-seated aching of one side of the body, referred generally to the region of the spleen, sometimes to that of the liver, stomach, or heart, with great languor and depression of spirits, amounting in some instances to complete prostration of both mind and body, and not unfrequently to decided impairment of the mental faculties. Such constitutions are also liable to attacks of asthmatic breathing, a short, dry cough, commonly called a stomach or liver cough; hœmorrhoids, varicosis of the limbs, swelling of the ankles, chlorosis, and jaundice.

Puberty is early accomplished, comparatively speaking, in women of the bilious temperament, or is seldom protracted, at least, beyond the seventeenth year. The discharge is liable to be continued through a period of from five to ten days at each return; it is usually abundant, exceeding the average amount, and often increases in quantity as life advances, especially if the person have borne children. At the final

menstrual climaterie, which, in women of this temperament, takes place most commonly between forty-three and forty-seven years of age, when difficulty is experienced in surmounting the change, symptoms of congestion of the liver and the associated viscera are soon manifested, attended with dyspepsia, or jaundice; asthma, hœmorrhoids, varicosis, anasarca, and especially a phlebitic state of the lower uterine vessels, often implicating the adjacent peritoneum, and resulting in effusion within the abdominal cavity.

The *lymphatic* or *phlegmatic* temperament is indicative of want of energy in the functions of both animal and physical life. The power of the capillary circulation, especially that of the absorbent system, is strikingly defective. Its external signs are, light complexion, light grey or blue eyes, a sallow or unhealthy whiteness of the skin, thin, sleek hair, small blood-vessels, weak pulse, coldness of the surface, loose fibre, and general tendency to a relaxed state of the system. The person is languid and heavy, slow in manner, impatient of fatigue, unexcitable, and a stranger to fits of passion or violent mental perturbation. These characteristic traits, when fully developed, can scarcely be said to denote a temperament merely, in the generally accepted meaning of the term; but rather a diathesis, — a condition of body bordering upon disease, or, at least, eminently predisposing to its propagation on the application of an exciting cause.

The diseases of the lymphatic constitution are principally of a chronic character, and such as result from vascular and organic debility; as atonic dyspepsia; irregularity of the heart's action terminating in dilatation; indolent ulcers and tumours, and malignant diseases. In retarded or suppressed menstruation the most common affections are, general dropsy, commencing usually in the feet, and subsequently involving the whole areolar tissue; chronic inflammation of the joints, attended with serous effusion, constituting the form of disease

known as white swelling; glandular congestions; vicarious bronchial and vaginal catarrhs; diabetes; fluxes from the bowels, and diarrhœa.

In persons possessed of this constitution, menstruation commences at a later period of life, and the proportion of unfavourable cases considerably exceeds that of either of the preceding temperaments. They carry their children with much suffering, although the proportion of their abortions is rather below the average; and they continue bearing children to a late period. Their menstrual terms are subject to considerable irregularity in regard to their repetitions; the amount of discharge is rather below that which obtains in the bilious temperament; being thin, pale, and watery, and it occupies, on the average, from four to seven days. The final menstrual climacteric occurs generally between the ages of forty-six and fifty-four, and like that of the commencement, is often surmounted with considerable difficulty. Irregularity, with intervening leucorrhœal discharges and severe sympathetic suffering, often prevail for two or three years before the change is complete; the latter phænomena, accompanied by a sense of bearing-down, aching of the loins and hypogastrium, piles, dyspepsia, erysipelas, and jaundice, being in some continued long afterwards; and accessions of uterine hœmorrhage are not unfrequent some years after the regular catamenia have entirely ceased.

The *melancholic* or *atrabiliary* temperament of Hippocrates is now scarcely alluded to by modern physiologists. Mr. Noble has disposed of it with a mere casual allusion. There is no doubt, however, that a form of constitution answering precisely to the description given of the one under consideration, and bearing no very near affinity to any other, is frequently met with in this country, and more frequently still among the people inhabiting the south-eastern districts of the European continent. If an analogy might be attempted,

it would probably be referred to a mixture of the bilious and lymphatic temperaments; but while it holds but a remote physiological or pathological similarity to the former, its physical characters, as compared with the latter, render it decidedly distinct from either. It is characterized by a sallow, unhealthy hue of the skin, which is tumid, flaccid, coarse in texture, and appearing as if in unnecessary abundance; the hair is dark, sleek, and often scanty in growth; the stature tall and meagre, the joints large and prominent, and the gait slow, heavy, and ungraceful. These traits are associated with a dull, unexcitable nervous system, a gloomy, morose disposition, having a particular tendency to monomania and hypochondriasis, to diseases dependent upon a languid circulation, to malignant degeneration of structure, and scrofula.

In females possessing this temperament prominently marked, menstruation comes on at a late period, and is often tardily and with difficulty accomplished. The most common forms of amenorrhœa to which they are liable are, dropsical effusions, glandular congestions, asthma, irregularity of the heart's action, indolent ulcers, disease of the bones, and vicarious discharges sometimes from breach of texture, and not seldom consisting in abnormal augmentation of a natural organic product. They are moderately prolific in childbearing, although they seldom, comparatively speaking, carry their offspring to the completion of the natural term, on account of the great tendency to congestion of the uterine veins. They surmount the last menstrual crisis, which occurs at a late period, with difficulty; and are particularly subject to the spongeoid form of ulceration of the lower part of the uterus to be hereafter described.

A state of the system is not unfrequently met with wherein certain peculiarities, unlike any of those already described, exist in a sufficiently marked degree of preponderence to characterize, according to some writers, a particular

condition: this is the *nervous* temperament, first described, as distinct from those already acknowledged, by Dr. Gregory.[1] It appears to owe its existence to some fundamental defect in, or disproportionate developement of, the vital centres, involving loss of balance between the sentient and organic principles, attended by corresponding effects upon the general character and physical susceptibilities. There are, obviously, two conditions under which this state of things may exist, giving rise to two very different classes of phænomena. One of these is characterized by deficiency of power in the brain and nervous system, being the temperament particularly indicated by the author now quoted; the other possessing a high degree of excitability, or nervous energy, and corresponding to the *muscular* temperament of some authors.

The nervous temperament, so called, may be associated with any of those already described, the operations of which it has a tendency to exaggerate or modify in a remarkable manner. In individuals possessing these conditions prominently expressed, menstruation is attempted early, commences with difficulty, and, when established, is frequently accompanied with disturbances of a very troublesome, and often of an alarming character. At the commencement, the symptoms, in cases of difficulty, are, pain of the head and along the spine, disturbed sleep, twitching of the muscles, spasms, convulsions, diminished power of, or loss of sensibility in, a part, irritable bladder, fits, St. Vitus's dance, tic douloureux, &c. Each succeeding period is ushered in by one or more of these symptoms; and later in life, an irritable state of the womb is established, leading to miscarriages, and sometimes resulting in sterility.

The combination, in different degrees, of the preceding fundamental forms of constitution, gives origin to an infinite variety of temperaments and complexions, of which no two

[1] Conspectus Medicinæ Theoreticæ, cap. xxiii. p. 278.

are ever found preciscly alike. The primary temperaments, although occasionally strongly expressed, are perhaps never seen fully developed, unalloyed with one or more of the others; indeed, such a developement essentially indicates loss of constitutional balance, and is incompatible with a state of health; the term temperament therefore, in its present application, is altogether a misnomer.

The best form of constitution is undoubtedly that denominated the *sanguine-bilious*, or the *bilious-sanguine*, according to the predominance of one or the other of these leading traits. It is at once the most healthy and the most enduring, and is much more frequently met with than any other in this country, being admirably adapted for withstanding the inclemencies of the English climate. Its prevailing tendencies are to dyspepsia, rheumatism, and affections of the urinary organs; and it is the form of constitution upon which the gouty and calculous diatheses are most readily engrafted during the latter years of life. The proportion of unfavourable cases connected with the menstrual crisis is very small; the child-bearing period is generally favourable throughout; and the last critical change is surmounted without inconvenience or difficulty.

The combination known as the *sanguine-lymphatic*, or the *lymphatic-sanguine*, occurs under a great variety of modifications, and is one also which, unfortunately, is frequently met with in this country. It is, for the most part, indicative of extreme delicacy, predisposing to a class of diseases at once the most serious and unmanageable of any to which the human frame is liable, — those, namely, of a scrofulous character. A common result of functional impediment at puberty in individuals possessing this conformation, is a congested state of the mucous membranes. The vessels ramifying upon the lining membrane of the nose are highly susceptible of this condition, and readily give way under pressure of vascular

fulness. Hœmorrhage often takes place also from the stomach, bowels, throat, or bronchial tubes, and not seldom from the minuter bronchial ramifications in the substance of the lungs. Lesions of this last description lay the most certain foundation for destructive organic mischief, which may be delayed or hastened according to circumstances, but which, for the most part, accomplishes its fatal course in from six to twelve months after the appearance of the hœmorrhage.

Scrofulous Diathesis.

Constitutional peculiarities and morbid predispositions begin to show themselves more decidedly at the period of puberty than at any other time of life, and exercise considerable influence in favouring or retarding menstruation at its onset. In the offspring of parents in whom certain tendencies or temperaments have been strongly marked, a particular habit of body, or diathesis similar to, or differing only in a very trifling degree from that indicated in the parent, is often, at this period, brought into active existence. A familiar instance of this is known in the *diathesis of scrofula.* Parents possessing prominently the constitutional traits under which this condition usually occurs, whether it be inherited or induced, whether existing in both or in one only, and although they themselves may never have experienced a symptom of disease of the character indicated, may, nevertheless, find it fully developed in their children, even from birth. A fine physical formation, with handsome proportions; fair, half-transparent skin; bright ruddy complexion; sleek hair, whether light or dark; dilated pupil, pinched nose, thick upper lip; an active and lively disposition, quick intellect, and precocious understanding; — these are the properties of a constitution eminently favourable to the generation of morbid action, and in which disease speedily ripens into maturity. When, during childhood, such individuals are subject to inflammatory

affections of the eyes, leaving interstitial deposition between the layers of the cornea, or permanent thickening and redness of the eyelids; when eruptions and superficial abrasions of the skin assume a chronic and peculiar character, and heal with difficulty; and the lymphatic glands and large joints appear readily susceptible of inflammatory action; the period of puberty may be anticipated with well-founded apprehension; such affections being frequently replaced by lesions of a more formidable and persistent character.[1]

The prevalence of scrofula is said to be very different in different countries, and in different districts of the same country; creating the belief that its origin is to be referred to the influence of climate, and to the peculiar nature and productions of the soil. This, however, I am inclined to a certain extent to discredit, holding the opinion that its existence may be more frequently and clearly traced to moral causes, than to geographical or geological agency. So far as I know, the proportion of cases of this nature is very similar among communities similarly circumstanced in respect to civilization and the moral status. The average will be found to differ considerably however, if taken from examination of individuals of different ages, as during childhood, and again between puberty and manhood; in the middle age of life, and at a later period. On this account the following statement may appear somewhat below the general average, as it does not include individuals below the age of the first menstrual climacteric: the severest forms of scrofulous disease occurring in early life, and the great majority of the cases which have a fatal issue terminating during this period, or at all events, before the fulfilment of the twenty-first year.

[1] For the most comprehensive and scientific account of scrofula to be found, so far as I know, either in this or any other language, the reader is referred to a work recently published, intitled "Scrofula; its Nature, its Causes, its Prevalence, and the Principles of Treatment," by B. Phillips, F.R.S.

Of 4000 child-bearing women whose personal histories, and, wherever practicable, those of their families, were carefully investigated, 226, or 5·65 per cent., bore decided indications of the scrofulous constitution. Some of the younger women were labouring under scrofulous disease at the time of the inquiry; and the rest retained traces of its former existence, such as indurated glands, raised cicatrices in the cervical region and elsewhere, evidences of former ossific disease, partially disorganized joints, opacity of the cornea, and an irritable state of the exposed mucous surfaces; which together with the physical traits before-mentioned, and this other important circumstance, that their offspring were suffering, or had suffered, under similar affections, left no room whatever to doubt as to the nature of the diathesis.

The prevailing temperament of the above individuals was as follows: lymphatic, including the bilious-lymphatic, or melancholic, variety, 128; sanguine, including many of what would be called the nervous temperament, 74; bilious, or sanguine-bilious, 24. I assign no separate place here to the nervous and melancholic temperaments before mentioned, on account of their existence, as distinct from the rest, being not so generally acknowledged. The scrofulous habit however, may be formed in either the one or the other, but is most commonly observed perhaps in the latter. A highly excitable state of the brain and nervous system is frequently found co-existent with the sanguine temperament, which is thereby rendered morbidly irritable, and often exceedingly delicate and unhealthy; its combination with the lymphatic is productive of results of a very similar character; while with the bilious constitution, on the contrary, the result is altogether different; a more regular and energetic discharge of the functions being promoted, and the health invigorated.

The sum of the ages of the preceding 226 individuals at the

time of their first menstruation was 3550, giving 15·7 years for each; a result very similar to the general average. The signs of puberty announce themselves, however, at an earlier period of life in the scrofulous, than in those of a more vigorous frame; but the functional changes are longer in being accomplished, and their healthy continuance is sustained with comparative difficulty afterwards.

The number of unfavourable cases was 86, or 38·05 per cent., being greatly above that representing the general average, which, including the class of cases now under consideration, was 22·30.

The cause upon which the phænomena of scrofula immediately depend, is extremely obscure. It has been vaguely referred to the operation of some principle present in the blood, and through its agency determining a certain condition of the vital organs, which renders them less fitted for the efficient discharge of their functional offices. This *materies morbi*, supposed to be inborn with the individual, but occasionally originated under a variety of circumstances at different periods of life, is regarded as a poison so intimately combined with the fluids as to be inseparable from them, communicating its characteristic properties to the solids and organic products in every part of the body. Writers have stated, however, that we possess no sufficient data upon which to assume the existence of such an agency as a distinct principle, and that all the phænomena usually witnessed in scrofulous diseases may be satisfactorily accounted for from the state of anœmia, or poverty of the blood, a condition apparently prevailing in all decidedly scrofulous constitutions. Chemical and microscopical examination of the blood and other animal fluids of scrofulous persons has furnished results which certainly tend to such conclusion; but whether the appearances described be owing simply to proportional differences in the elemental constituents of these products,

or whether they depend upon the presence of a separate principle, is not demonstrated. Dubois, who examined the blood of scrofulous persons, found that it coagulated slowly, that the clot was small, soft, and diffluent, and the serum thin and of a red colour. When examined under the microscope, some of the corpuscles appeared devoid of colour at the edges only, some entirely colourless. Their size was not materially changed; but they appeared flattened, spherical, and cylindrical. Hence he concludes there is a deficiency in the quantity of the salts of the blood in scrofulous persons.

In the few opportunities that have occurred to myself of examining and comparing specimens of healthy and scrofulous blood, the appearances were somewhat different from those above described. A difference was always found to exist in the relative densities of the two fluids; the serum of scrofulous blood appearing more limpid, and containing fewer globules in a given space than the other; the globules also, in almost all instances, were perceptibly larger, and a greater number of colourless globules were met with in this than in the healthy fluid. I was seldom able to detect the colourless edges which some of the corpuscles are said by Dubois to have presented, or their cylindrical form. Upon what precise condition of the body these peculiarities depend, or in what organ or tissue they first take their rise, is still enveloped in obscurity, and must be left for future researches to determine: it is probable that a cause so subtle in its nature will ever remain unknown except by the effects which it produces.

Origin of Scrofula.

The question relating to the transmission of scrofula, from parent to child, is no longer one of dispute; the disposition is considered as undoubtedly hereditary. Its origin is referred to a multitude of causes, the principal of which are, the venereal poison, severe suffering under protracted contagious

disorders, the improper use of mercury and of some other medicines, frequent errors in diet, habits of intemperance, and indeed to whatever has a tendency to debilitate the vital powers, and induce, by long-continued operation, a cachectic state of the system. This condition, from which no temperament or frame of body is exempt, may be regarded indeed as forming, in some constitutions, the true scrofulous diathesis. It consists, as was already intimated, in an altered, perhaps an impoverished state of the blood, first manifesting itself in a vitiated condition of the secretions, accompanied by decay, or complete loss of the enduring tone of the muscular and other solid tissues of the body. A simple instance will suffice to show in what manner scrofula may be induced by the action of mercury, independently of previous disease.

A girl began to menstruate at eleven years of age under the following circumstances. She was standing at the counter of a druggist's shop, when, through the jeering defiances of a boy with whom she was conversing, she was induced to swallow between twenty and thirty of the pills which he was in the act of compounding. These pills contained calomel, but it is not known to what amount. The result was an intense salivation, and she was confined to bed six weeks in consequence, during which time menstruation commenced. Her health was only imperfectly restored at the end of sixteen months. From the time of its accession, menstruation continued to recur at regular intervals; but the discharge was small in quantity, pale, and attended with more or less of inconvenience. Between her thirteenth and seventeenth year she was several times affected with chlorosis; and suffered repeatedly from abscesses in the neck and axillæ, rheumatism of the head and limbs, nodes upon the tibiæ and upon the ulna on one side, and mercurial eczema. She is now twenty-three years of age, mother of one child, and has the scrofulous diathesis decidedly developed. The complaint must date its

origin from the accident in question; as she was previously in perfect health, of the bilious temperament, and her parents, as well as her sisters and brothers, are also healthy, and exhibit no traces of any such constitutional imperfection. This was obviously the cause also of the early appearance of the menses, the other female members of her family having had the change at a much later period in life. The scrofulous taint has been transmitted in a decided form to her child.

The scrofulous diathesis sometimes originates in infancy or early childhood where the constitution of the individual so affected has at first appeared sound and healthy, and no trace of it has existed in the parents or ancestors. The cause, generally, is a syphilitic taint transmitted through the mother. Such cases are by no means of uncommon occurrence. The symptoms, which make their appearance at a period after birth varying from a few days to a few weeks, or even to several months, (if the taint have been communicated before the birth of the child,) manifest themselves in the form of secondary syphilis, and sometimes, among the ignorant classes, are allowed to exist during many weeks before medical aid is solicited. Mild mercurial treatment practised by inunction after the plan recommended by Sir Benj. Brodie, is, in most instances, sufficient for their cure. But the system, by the time relief is demanded, is often so thoroughly imbued with the poison, that irreparable mischief is already done ere the case is investigated. A female child, seven weeks old, was brought for treatment to the Lying-in-Hospital, in October, 1845. She had symptoms of a decidedly syphilitic character in the secondary form, which had first appeared four or five weeks previously. The parts about the fundament, back of the thighs, legs, and feet, the forepart of the chest, and the face, were covered with copper-coloured, scaly eruptions; the mucous lining of the nose and throat were congested and erysipelatous, and the glands behind the jaws and about the

nape of the neck, were enlarged and painful. The mother appeared quite healthy, and it was not then ascertained that either she or her husband had suffered since marriage from syphilitic symptoms. I believe the mother had never been conscious of such affection in her own person. It appeared, however, upon further inquiry, that the father had had a venereal sore, of which he was considered cured a few weeks before marriage. The little patient, who was their first child, recovered favourably, but now exhibits decided traits of the scrofulous habit. One of the tumours on the side of the neck suppurated some time afterwards, and discharged a floeculent matter, leaving on healing, a raised scar, which will probably remain visible through life. The parents have no traces whatever of the scrofulous diathesis.

After the child's recovery, the mother made application for the relief of a vaginal discharge with which she stated herself to have been affected ever since the beginning of pregnancy. Her neighbours had informed her that such complaints were very common, and of no consequence; but as she suffered severely also from severe hypogastric and lumbar pains, with a severe bearing-down, she was induced to apply for treatment. The labia uteri were found tumid, hard, and excoriated over the whole of their extent, presenting several aphthous patches of various sizes, from which the crusts were readily removed by means of the lint used for the purpose, leaving more deeply excoriated patches of corresponding dimensions beneath. The patient underwent a course of alterative treatment, and the diseased labia were touched with the strong solution of nitrate of silver. The application was repeated four times, after which the surfaces were quite healed, the discharge (which had presented true purulent characters,) was completely arrested, and the pains were no longer felt.

In August, 1845, a child, eighteen months old, daughter of strong and healthy parents, was brought to me, having the

skin in great measure covered with blotches of a syphilitic character. The throat was swollen, and several dark red patches were observed about the fauces. The limbs were dropsical, the abdomen enlarged, the breathing wheezy, and the voice husky. The invasion of these symptoms, which first presented themselves in form of eruptions on the nates, legs, and about the mouth, was referred to a period several months previously, at the age of thirteen or fourteen months, up to which time the child had enjoyed excellent health. At the period in question the mother, who was still suckling, had sore throat and an attack of iritis, with great intolerance of light, for which she was several weeks under treatment: these symptoms were believed, by the patient herself, to have arisen from exposure to cold. Three months before this event, her husband was treated for a primary venereal sore, from which he soon recovered, and has since had no secondary affection. The child, for a length of time, had been under the care of a female practitioner, celebrated for her skill in diseases of children; shortly after I saw her, she had an abscess at the side of the neck, which discharged the thin flocculent matter characteristic of struma, and in the course of a few weeks she sunk under mesenteric disease complicated with dropsy.

Some weeks after this event, I was called to attend the mother for an attack of acute peritonitis, coming on after a long and hurried walk upon a wet evening. She said her health had been infirm, ever since the affection of the eyes above mentioned. Her principal ailments had been, constant aching of the back, pain of the lower part of the abdomen, great languor, and an abundant vaginal discharge of yellow matter. This discharge became considerably less on the invasion of the acute peritoneal symptoms, but returned in its usual form and quantity during convalescence. The uterus was now examined by means of the speculum; its cervix and

labia were found to be tumid, hard, and the latter extensively excoriated, presenting here and there aphthous patches of different sizes; the left *commissura labiorum* was occupied by a deep, ulcerated fissure; the whole exuded pus, which had an alkaline reaction. A course of alterative treatment was immediately entered upon, of which the compound decoction of sarsaparilla with the oxymuriate of mercury formed the principal part. The solid nitrate of silver was applied to the ulcerated surfaces, and several times afterwards the strong solution was used. In four or five weeks, all symptoms of disease had completely vanished, and she has since remained in good health.

A gentleman, twenty-eight years of age, whose family history is well known to me, has chronic thickening and inflammation of the eyelids, with loss of the eyelashes. The irritation is often aggravated from slight causes, and sometimes extends along the lyehrymal sac and duct, into the nose, accompanied with a troublesome coryza. For years he had, until lately, a very obstinate and annoying eruption, of a dark red colour and scaly appearance, on both sides of the face, and now and then about the lips and nostrils. At eighteen or nineteen years of age, he had glandular swellings behind the jaws, and, for a length of time, a sore on the breast-bone, exuding a glutinous matter which concreted into a conical scab. An affection of the skin of a secondary syphilitic character, came on in early infancy, and continued returning and disappearing in turns, till after the second teething. He is tall and strongly built, has a dark complexion, with dark brown crisp hair, and is otherwise healthy. His sister, two years younger, who also possessed all the external signs of an originally strong constitution, had an attack, during infancy, of eruptions as decidedly syphilitic in character as those above described, with chronic enlargement, a little later in life, of the right knee; and her health and appearance

ever afterwards were delieate. At fifteen or sixteen, her general health began to decline, and her knee became again enlarged, presenting the usual appearanee of white-swelling. Menstruation commeneed with difficulty, and was often interrupted, irregular, and scanty. Symptoms of chest disease supervened, and she died at the age of nineteen of tubereular phthisis. This disease had previously been unknown in the family. The remaining children, four in number, are remarkably strong and healthy, and have the sanguine-bilious temperament well defined.

The father and mother of this family are both living, and healthy; the latter has never been aware of the slightest traee of the syphilitie taint in her own person, with the exeeption of oecasional leueorrhœa of a yellowish charaeter, for which she received no treatment. Most of her children had purulent ophthalmia in early infaney. The father, however, in his youth, had more than onee suffered severely from venereal affections; but he assures me that he was eonsidered by his professional attendant, a man of some eminenee in the medieal world in his day, to have been perfectly eured ten or twelve months before marriage, and he never afterwards had a primary sore, nor exposed himself to the risk of having one. Notwithstanding, a few months after marriage, he experieneed an attaek of seeondary syphilis of such severity that an active eourse of treatment did not completely subdue the symptoms in less than twelve months. The skin was almost eovered by dark sealy patehes, the throat and nose were ulcerated, and inflammation of an inguinal gland terminated in an extensive burrowing abseess.

The foregoing eases are given with a view to illustrate one of the modes in whieh the serofulous diathesis may be generated, *de novo*, from a remote eause of loeal origin, whieh had been productive of no serious eonstitutional results in the individual in whom the germ of disease was first implanted.

In the first case mentioned, the symptoms were remarkably well characterized as secondary syphilis; yet no affection bearing the same features in the father from whom, or in the mother through whose system, it had been transmitted to the sufferer, was developed, — with the exception of the uterine affection already noticed. There seems to have been a perfect transfer of the disease, after the completion of its first stage; whilst in its secondary form it was conveyed to another individual, not by direct communication, but by the intervention of a third person, through every part of whose system the poison must have circulated before its deposition in that of the offspring. The circumstance least easy of explanation is, the immunity of the mother from contamination of a similar kind, and to a like, or even greater extent. How she should have escaped the ravages of so widely diffused and virulent a poison, can be accounted for only by the tendency to localization observed in this as in most other principles of disease of a specific nature; and by the power of resistance inherent in the constitution by which it is enabled to reject whatever is foreign or hurtful to it. Much is ascribable also to the changes which take place in the circulatory and secernent functions during the process of utero-gestation. The growth of the ovum, requiring for its purposes so large a share of the maternal fluid, necessitates an unwonted freedom of circulation through the vessels of the uterus, which may, during this period, be not inaptly considered as an active evacuant organ.

The mother referred to in the third example was similarly exempt, although her first two children received the taint in a very aggravated form, giving rise to a diathesis as decidedly scrofulous as one directly transmitted. In the second case, the disease, although of no great severity either in its primary or secondary stages in the parents, exhibited itself under its severest aspect in the offspring, the child having

unconsciously imbibed the fatal poison entirely from the breast of its mother.

It may be worth while remarking, amid the conflicting opinions now entertained in reference to the beneficial or injurious effects of mercury when employed as a remedial agent in the treatment of syphilis, that, in the latter instance, the primary affection was treated on the mercurial plan, but in the mildest form; and I am assured that the effects of the remedy were never experienced in the mouth. It may be safely asserted however, that no disease is better understood in regard to treatment, in the present day, than the one in question; and there is no doubt, that the evil consequences just enumerated, resulted from imperfect cure of the primary affection in each case. I shall have occasion hereafter to recur to this subject when considering the causes of abortion and premature labour. It cannot but strike the reader, on perusal of these cases, remembering at the same time how frequently such pictures are presented in painful reality to our view, what a weight of human misery the delinquencies of a single individual may entail upon an unoffending progeny; and what an amount of suffering must necessarily be endured, — what years of anxious watchfulness and unrelenting discipline exercised, ere the mischief be repaired. Truly, "the evil that men do lives after them." The libertine is not always spared to reap the harvest of his own follies, of which the consequences are visited with ten-fold severity upon his children, even to the "third and fourth generation."

Habits of intemperance are productive of results of a kind equally disastrous with those above-mentioned. Frequent recourse to fermented liquors in excess; the habitual indulgence of an inordinate appetite for food; the continued use of food of an improper kind, or of an innutritious quality; or the long continued gratification of a desire for a particular

kind of aliment to the exclusion of that variety which nature requires, and has so bountifully provided; — all tend to impair the tone of the digestive and assimilative organs, and in time to destroy that exquisitely refined sensibility of the lacteal absorbents which is especially adapted, by its elective power, to separate from the alimentary mass, those portions alone which are suitably prepared and fitted for the purposes of the system, and to reject whatever is baneful or unserviceable. The remote consequences of such errors are — irrespective of immediate effects — the developement of a particular temperament or diathesis in the offspring, giving origin to the various forms of scrofula, especially those affecting the osseous and fibrous tissues, resulting in rickets, spinal distortion, chronic enlargement of the joints; dropsy, phthisis, and some nervous affections. The following instance, of a kind too familiar, doubtless, to admit of a question as to its authenticity, may be quoted in illustration. A gentleman possessed of large landed estates died at an early age from the effects of habitual intoxication. His only son, for many years a minor, and afterwards well known in sporting circles, also fell a victim to intemperance, and died at the age of thirty-six of delirium tremens. He left a numerous family, of whom two have died at the approach of adult life of phthisis, and a third at the age of twenty-two of a complaint equally the result of inherited vice of constitution; and some of the remaining children possess a diathesis eminently prepared for the ripening of similar affections. Both the gentlemen now alluded to, originally remarkable for both physical and mental vigour, married wives of excellent constitutions, and the ancestors on both sides were equally strong and healthy, and lived to an advanced age.

A particular temperament more than ordinarily expressed in an individual, will sometimes be transmitted, losing none of its characteristic features, through several successive or

alternate generations; and, becoming more prominently marked at each succeeding remove, the healthy balance between the vital centres is ultimately destroyed, and the temperament merges itself in a particular diathesis, or habit of body bordering upon disease; and this result will be the more speedily accomplished if due precautions be not observed in adopting the means for its modification, amongst which a properly assorted matrimonial alliance will be found to be of no secondary moment. It is a recognized principle among breeders of the lower animals, that a too extended repetition of offspring between individuals whose origin is traceable, on both sides, to the same stock, has a constantly increasing tendency, after the third generation, to deteriorate the quality: the practice of breeding "in and in" is therefore carefully avoided, and a renovation from time to time procured by "crossing the breed" between individuals of different tribes, reared in remote districts. The same rule holds good in respect to the human species; intermarriages between successive generations of the same ancestry resulting, after a period, in degeneration of the progeny, either mentally or physically, or in both ways. I am aware that it has been attempted to refute this proposition, and examples have been adduced tending to prove its incorrectness; but such cases, if proved, are exceptions to the rule, and are to be accounted for only from the circumstance, that the same striking similarity is less strongly maintained in some families than in others; the general rule being, that one particular temperament prevails in all the offspring of the same parents through several generations. It is not simply from the alliance of descendants of the same progenitors that the evil originates; but from the combination of similar temperaments or *diatheses,* whether in the same or in different families, especially when these constitutional traits happen to be prominently developed. For example, the children of parents, both of whom are afflicted with scrofula, can

seareely be expected to possess perfeet immunity from that taint, but rather to have it still more strongly expressed than those from whom they sprang; and so of any other constitutional disease or tendeney, whieh being the same in both parents, must, under ordinary eircumstances, spring up in an aggravated form in the progeny.

With a view to the modifieation of these eonditions therefore, it is evident that a properly assorted matrimonial alliance is of the first importanee. But there are other means likewise by whieh, if properly and timely adopted, the serofulous diathesis may be very materially altered. However strongly marked originally, there is little doubt that sueh a condition of the system may be so far changed as to render the individual scarcely more than ordinarily susceptible of diseased aetion. Instances wherein such results have been aecomplished are sufficiently numerous and well attested to warrant this assertion. Out of many cases in point, one of a very simple description may be given in illustration.

The children of parents with whom I am intimately acquainted have the serofulous diathesis strongly developed, even from birth. The eldest, a son, shewed symptoms of general dropsy from his earliest infaney. The face, from no appreciable cause, and the eyelids, espeeially after sleep, were so puffed as to be ineapable of being opened until suffieient time had elapsed for the swelling to subside. The limbs and the whole body occasionally partook in the enlargement, whieh was almost always notieeable on the feet and baek part of the hands. He had frequent attaeks of asthmatie breathing. His appetite was good, and the body grew in size; but it was late before he was able to walk. He appeared weak in the baek; and at three years of age the spine began to projeet at about the third or fourth dorsal vertebra; the attaeks of asthma becoming at the same time more frequent and distressing. About this period, a glandular swelling appeared in the

axilla, which suppurated, and discharged a flocculent matter: this was regarded by the parents as the result of vaccination. The distortion of the back increased, and became decidedly angular, and the tumour was soon so considerable in size that the bodies of two at least of the vertebræ must have been almost entirely destroyed. He died at the age of five years. The second child, a daughter, is affected precisely in the same way, with the exception of the spinal distortion. She has had several strumous abscesses, is stunted in figure, and decidedly asthmatic and dropsical. She has also partial loss of the sense of hearing. The father and mother have both the lymphatic temperament very prominently marked; the former having a very troublesome asthma, with occasional swelling of the limbs and of the whole body; and the latter exhibiting evidences of struma.

The mother of this family is tolerably healthy except in pregnancy, when, during almost the whole period, she has difficulty of breathing and general anasarca. On the birth of her third child, a daughter, it was recommended that a nurse should be procured for it of a complexion and temperament entirely different, if possible, from that of the parents. This suggestion was successfully carried out, and with the happiest results. The child is now three years and a half old and perfectly free from all outward marks of the family peculiarities, and has not once suffered from the hereditary affection, although, at birth, she was every way similar to her elder sister. During the interval between this and her fourth pregnancy, and until the time of her accouchement, the mother was much better in health than she had been since marriage, and refused her consent to the adoption of the plan which had been pursued in the case of her third child, believing, from her improved state of health, that her own nursing might now with safety be trusted to.

At the time of birth, the child, a daughter, appeared no

way different in complexion and general form, from the preceding ones; but at the age of two or three weeks she exhibited symptoms of the hereditary tendency in swelling of the face and limbs. These were in some measure subdued by medicine and dietary regulation; but at the age of five months, on recovering from vaccination, the whole chain of glands behind and beneath the lower jaw became violently inflamed, resulting in two extensive abscesses, from which was discharged an enormous quantity of the scro-flocculent pus characteristic of scrofula. The child lingered through a protracted convalescence; one of the abscesses healed favourably; the other contracted into a deep narrow sinus with raised orifice, and continued to discharge a watery secretion several months. Induration of the subjacent structures remains to some extent, and the scars are still unsightly.

Hereditary Predisposition.

It is popularly believed that menstruation begins at, or about the same age in all the female members of the same family. A mother having commenced at a certain time of life, early or late, looks for the change at a corresponding age in her daughters, and it is expected to happen in like manner through succeeding generations. Deviations however, from this order of occurrence are so common as to leave it uncertain which ought to be considered the rule and which the exception; as the subjoined, among a collection of similar instances, will serve to show. A mother and her six daughters began to menstruate in the following order. It may be mentioned that there is some slight difference in their respective temperaments, although a strong family likeness prevails through the whole group; and they were all similarly placed in early life, being occupied as sempstresses, and in very comfortable circumstances for their condition in life. The mother accomplished the change of puberty at thirteen years

of age; the eldest daughter at twenty-three; the second and fourth at sixteen; the third at fifteen; the fifth at fourteen; and the youngest at thirteen. The fourth suffered for several months previous to the change from chlorosis, from which she recovered on the appearance of the menses, during a temporary residence in Scotland. In the youngest, the change took place on recovering from an attack of fever; but the remaining four and the mother, experienced no inconvenience whatever, either before or after the change.

A young lady of the sanguine-lymphatic temperament, descended from a strumous family, first menstruated when at school, before she had attained the age of ten years and a half. The discharge came on whilst at play, and occasioned great alarm to the mother; the event having occurred in her own case several years later. Their medical attendant regarded it, for a time, as accidental hœmorrhage occasioned by over-exertion. The phænomenon recurred however, at the regular monthly periods, and was not afterwards interrupted except once during an attack of illness at the age of fifteen, till after marriage. This lady, who is now past the age of child-bearing, has three daughters, all of whom began to menstruate, without any noticeable inconvenience, at fourteen and a half years of age; the period being the same, as near as could be ascertained, in each instance. It is remarkable that the daughters are totally different one from another in temperament and habit of body; one having the bilious, the second the sanguine, and the youngest the lymphatic or phlegmatic temperament decidedly predominating.

The female members of a family with whose history I am intimately acquainted, consist of a lady aged seventy-one, her daughter aged forty-nine, and two grand-daughters of the respective ages of twenty-three and twenty years. The first states that she began to menstruate without the least difficulty at the age of eighteen; her daughter, under equally favourable

eireumstances, at the age of ten years and nine months: the latter case was remarkable from having occasioned the ehild's return from school several days before the commencement of the midsummer vaeation, the true nature of the diseharge, on aeeount of the age of the individual, not being suspected; the elder grand-daughter began at fourteen, after a protracted illness, the effects of whieh are still painfully evident; and the younger at thirteen and a half, without difficulty. They are in affluent circumstances, and were all placed under preeisely similar eircumstances, in regard to education and locality, at the period of life in question.

It has already been shown that in the great majority of instances, menstruation begins between the fourteenth and seventeenth years of life; and although the change frequently happens earlier or later, its non-appearance after the seventeenth or eighteenth year is generally looked upon as indicative of some imperfection in the organs themselves, or of a weak state of the general health, creating eonsiderable, though often groundless apprehension to the anxious parent, espeeially if the change happen to have oeeurred at an earlier age in her own case. It is suffieiently evident however, that the transmission of ancestral peculiarities is not always so certain that the precise periods of critical ehanges in the offspring ean be confidently fixed upon from what may have happened in the preeeding generation; and in regard to instances of menstruation tardily eommeneed, unless the physical signs of puberty have become fully developed, and ill health ensue, no alarm need be entertained on aeeount of this eireumstanee merely. A remarkable instanee of this kind of irregularity has been already mentioned, of a mother who began to menstruate at thirteen years of age, and her eldest daughter not before twenty-three; yet no unfavourable symptoms disturbed the health of the latter. No signs of womanhood, save in the developement of stature and of the mental faculties, had

appeared when arrangements were completed for a matrimonial alliance, and she only menstruated once before marriage.

Of Employment as influencing the Crisis of Puberty.

In the observations which have resulted from certain inquiries lately instituted by Government, and also from other sources of information due to the benevolent exertions of private individuals, concerning the state of health of large towns, and especially with a view to discover the prevailing causes of the insalubriousness of manufacturing districts, great stress has always been laid upon factory employment, as particularly calculated to induce a state of body rendering it pre-eminently susceptible to disease. The high temperature maintained in manufacturing establishments; the large quantity of fine cotton grains, dust, and other impurities with which the atmosphere of the rooms is usually loaded; and the short space of time allowed for physical relaxation or mental training, are the principal agencies to which the evils of the system generally, have been referred. Each of these, undoubtedly, has its baneful tendency, as well in this branch of labour as in others; but it is quite certain that the evil does not exist to such extent as has been officially represented. I feel persuaded that some of the reports given by those commissioned to inquire into the nature of factory labour in Manchester and other large towns, in reference to its effects upon health, are far wide of the truth; and that this will become daily more palpable as the real state of the case shall be submitted to a more rigid and patient scrutiny. It has been asserted for instance — and the assertion is quoted in every European country as referring to an absolute fact — that factory employment has a particular tendency to induce premature developement of the sexual organs, and that a precocious womanhood is more frequently witnessed among the manufacturing population than among other classes of people.

Until lately, I also entertained a similar belief, based, it must be confessed, upon the authority of others whose statements I now believe to have been advanced at random, or founded, at best, upon a very few isolated cases, altogether inadequate to a general conclusion. A more extended inquiry into the subject has convinced me of this popular fallacy. The subjoined facts will show that, in this respect, mill employment has an effect the very opposite of that which it is generally believed to have.

Of the 4000 individuals before quoted, 2127 were employed in mills, warehouses, and places connected with the various processes of manufacturing, at the period of puberty and for a length of time previous to its advent. Their collective ages amounted to 33296, affording an average of *fifteen years* and nearly *eight months;* of whom 511, or 24·02 per cent. suffered under disease consequent upon undue retardation of the functional changes at the commencement.

The remainder, 1873 in number, included all that were otherwise circumstanced; as domestic and farm servants, hawkers, sempstresses, and shop-women; together with a number of educated females not necessarily engaged in any pursuit, except school exercises. The sum of their ages was 28,982, giving *fifteen years* and about *five months* as the average age of puberty; and 375, or 20·02 per cent. experienced functional difficulty in form of amenorrhœa at the onset.

The foregoing calculations present an amount of evidence in favour of home and out-door, as compared with factory labour generally. Each division however, is made up of several kinds of employment, differing widely one from another in their nature as well as in their effects upon the individual, and of which those included in the first division are not all alike pernicious, nor those in the second equally favourable in their tendency. They have, therefore, been further subdivided, the first into five, the second into three groups,

representing as many kinds of occupation, of which the following constitute the particulars: —

TABLE IV.

Showing the relative healthfulness of eight different kinds of employments or pursuits, as evidenced by the manner in which they appeared to influence the menstrual functions at the age of puberty.

	Kind of occupation.	No. of Cases.	Age of puberty.	No. of unfavourable cases.	Percentage of unfavourable cases.
Of females employed in manufactories.					
Group 1	Spinners and piecers..	520	15·58 yrs.	143	27·50
Group 2	Power-loom weavers..	406	15·83 yrs.	104	25·61
Group 3	Carding-room hands..	483	15·25 yrs.	97	20·08
Group 4	Warehouse hands, &c.	465	15·17 yrs.	117	25·16
Group 5	Fustian-cutters, hand-weavers, &c.....	253	15·85 yrs.	50	19·76
Of females engaged in home and out-door employments.					
Group 6	Domestic servants, &c.	1349	15·60 yrs.	249	18·45
Group 7	Sempstresses, &c. ..	363	15·69 yrs.	74	20·38
Group 8	Educated ladies	161	14·41 yrs.	52	32·30

It is not presumed that the facts now stated are susceptible of any very important practical application, as regards the treament of disease. In a statistical point of view, however, they may be considered as not devoid of interest, especially as being a means of directing attention to any particular branch of labour which is proved to be less salubrious than another, and thus leading to the adoption of measures calculated to mitigate its injurious tendency. A further analysis of the cases composing the above table as individually recorded, although inapplicable here, might furnish matter of considerable interest to the statistical inquirer.

I think it worthy of espeeial mention also, that the age of puberty in the female sex appears peculiarly adapted for aseertaining the healthful or pernicious tendeney of any particular kind of occupation. The natural susceptibility of morbid exeitement from external causes, whieh the female constitution possesses; the exaltation of that susceptibility during its transition from a state of comparative apathy to a pitch of acuteness never manifested in the same degree either before the ehange or subsequently; and the awakening of sympathies, hitherto dormant, into high morbid activity eapable of affecting the economy, morally and physieally, in its most important relations; render the period in question perhaps the most anxious, and at the same time the most interesting era in the life of woman. It may with reason be said therefore, that it affords a very delicate test of the influence of external agents upon the female frame.

The high temperature maintained in mills is a cireumstanee to which, of late years, great importanee has been attached by writers. It is far less injurious to health however, than has been represented. I frequently meet with instanees of females who have been employed from the age of nine or ten years, to the middle period of life, and for at least twelve hours daily, in an atmosphere seldom below eighty or eighty-five, and sometimes above a hundred degrees in temperature, without in any way suffering in health or bodily vigour. Many of them work during the whole period of pregnaney until within a few days of their confinement; and it is not at all rare to see a mother again pursuing her avocations, with apparent comfort and eheerfulness, by the time the infant she has given birth to has attained the age of twelve or fourteen days. This, indeed, is a common oeeurrenee with those who are employed in the fine spinning establishments, where the atmosphere, although very hot, is tolerably free from impurities, and the labour is light. These females have generally a

healthy appearance, and are certainly as robust as the generality of dress-makers and shop-women. The individuals comprised in Group 1, are those especially exposed to the influence of a high artificial heat. Their proportion of unfavourable cases is certainly high; but these are induced far more frequently by the sudden and unavoidable exposure to a very different medium on leaving the mills, and against which no adequate precautionary measures are adopted to guard themselves, than from the immediate effects of heat. Their prevailing complaints are diarrhœa, catarrhs; epistaxis, alvine fluxes, and rheumatic affections; to all which they are more liable in winter and spring, than during the summer months.

Group 2, consists of power-loom weavers, whose average age at the first menstrual period is fifteen years and ten months, and the number of unfavourable cases one in four. The temperature of the rooms is from 50° to 60° Fahr.; the employment, though requiring constant attention, is not very laborious. Prior to these inquiries I had no idea that this class of operatives were so frequently the subjects of amenorrhœa; and especially as their appearance is decidedly favourable. I have heard of no reason why power-loom weaving should be less salubrious than some other branches of mill employment, and it may perhaps, be difficult to assign an adequate one. It is certainly exempt, in great measure, from those influences which have hitherto formed the principal grounds of objection to the factory system generally, — impurity, namely, of the atmosphere from the presence of floating cotton grains, and its high temperature. The air, however, is largely loaded with fine dust, arising from the material used for preparing the yarn before it is inserted in the loom. This which is a kind of starch, or flour powder, first used in form of a thin paste, becoming dry, is constantly shaken from the tense yarn by the vibration of the machinery. This article also, when applied, is sometimes in a state of mouldiness, and

is probably attended by some chemical change, as the peculiar smell of the acetous fermentation is often very perceptible on entering the rooms. Moreover, weaving apartments, are, for the most part, on the ground-floor, with a view, I understand, of securing a certain degree of dampness which is requisite to the successful working of the processes. I mention these as contingent circumstances merely, without pretending to assign to them any share as causes of insalubrity. Acute diseases, such as peritonitis, pleurisy, and rheumatism, consequent upon retarded or suppressed menstruation, are more frequently met with among power-loom weavers than among any other class of factory operatives.

Another of the circumstances which have been considered as principally contributing to render mill-employment unhealthful, is the abundance of minute particles of cotton constantly floating in the atmosphere of some of the rooms, and which, being necessarily inhaled, act as mechanical irritants to the throat and air-passages. This evil is found to prevail most in those apartments called the carding-rooms, where the first processes of manufacture are carried on; the atmosphere of which is, at times, completely dimmed by the diffusion of this "flue," and the dust simultaneously extricated from the masses of cotton in process of being torn up, and especially so in establishments where the coarser kinds of material are manufactured. The female operative however is seldom exposed to the most injurious part of this evil; the willowing processes and the task of dressing the engines, (operations attended by much inconvenience of this kind,) being performed by men. Nevertheless, young women employed in carding-rooms soon manifest a remarkable change in their appearance; the features becoming attenuated and sallow, the spirits subdued, and the general health less vigorous, although no actual disease is complained of; the voice, in a short time, acquires a peculiar huskiness of tone, which is so

constant, that one thus employed may be recognized the moment she speaks, and her occupation at once be with certainty pronounced. This source of irritation induces a state of chronic inflammation and permanent thickening of the mucous membrane lining the larynx, trachea, and bronchi, accompanied with a short, dry, tickling cough; and the characteristic huskiness remains, in most instances, ever after, even although the individual be early removed from the sphere of the exciting cause. Group 3 of the preceding table, is made up of operatives of this class. Their average age at puberty is about half a year earlier than that of the preceding Group, and the unfavourable cases considerably fewer. The forms of disease to which they are most liable as ensuing upon retarded or suppressed menstruation are, laryngitis, bronchitis, pneumonia, and their consequences; indigestion, hœmatemesis, obstinate constipation of the bowels, piles, pain in the region of the liver or spleen from congestion of these organs, and anasarca.

As the employment now under consideration, as well as that indicated in Group 1, requires no great amount of skill or bodily labour for its performance, children at the earliest age at which the law allows them to work in factories, are regarded as fit for it. We consequently meet with girls employed in the carding and spinning-rooms who appear completely to have lost their healthy constitutional tone long before the age of puberty arrives; and it is among these and others similarly circumstanced, that the most serious difficulties are encountered at the period in question. The temperature of carding-rooms averages from 55° to 65° Fahr.

The individuals composing the three Groups now noticed may be considered, in the fullest meaning of the term, Factory Operatives. They were exposed from an early age to all the influences of the system; high temperature, impure atmosphere, long hours, and in some instances, perhaps, confined

in ill-ventilated apartments; together with the multitude of still greater evils arising out of the wretched condition of their places of abode, a total disregard to cleanliness, and a badly regulated household economy. This last observation however, bears reference more especially to the Irish residents, of whom a large proportion of our female factory population consists. The persons comprised in the two next sub-divisions, although engaged in manufacturing pursuits, were altogether unexposed to the influences above referred to, except as to the number of hours during which they were employed daily; they must not therefore be confounded with factory operatives, properly so called.

Group 4 were employed as pickers, repairers, and inspectors of cloth in warehouses, warpers, silk winders, and others whose avocations were pursued in rooms where the atmosphere was moderate in temperature and free from impurities, and the labour comparatively easy. I know not how to account for the unfavourable cases met with among them. The average age at which their first critical change took place, is comparatively considered, early. Their prevailing complaints, consequent upon undue retention or suppression of the menses, consist of acute diseases of the lungs, bowels, or head, and fever.

Group 5 comprises hand-loom weavers and fustian cutters, whose occupation is generally pursued under the domestic roof, or at least in places separate from manufacturing establishments. They are decidedly the most healthy of the manufacturing operatives, and, although the poorest, look by far the best. This is perhaps owing to the more salubrious state of the atmosphere in which they pursue their avocations, or to the limited number of hours during which they work, the latter circumstance being altogether discretionary.

Group 6 comprehends domestic servants, field labourers, hawkers, &c. Their average age at puberty is rather more

than fifteen years and a half, and their liability to disease less than that of any other class. The forms of disease of which this and the preceding group are principally susceptible are pneumonic and rheumatic affections, anasarca, and chlorosis.

Group 7 includes milliners, dress-makers, all sempstresses, and shop-women. The nature of their employment seems to be favourable to health, and the period of puberty about the ordinary average. Their prevailing complaints consequent upon a faulty state of the menstrual functions are often of a nervous character so called, as tic doloureux, megrim, hysteria; and also anasarca, hepatic congestion, impairment of the digestive organs, and chlorosis.

The last group in the table consists of one hundred and sixty-one individuals who were not engaged in any other occupation than the ordinary educational exercises, either at, or previous to the accession of puberty. They were all the children of parents in affluent circumstances; and the change, in the majority, took place while they were still pursuing their studies at school. The age at which puberty was accomplished in them was *fourteen years and five months,* being more than a year earlier than the general average; and they suffered under disease consequent upon functional difficulty at the rate of 32·30 per cent., a proportion far exceeding that of any of the classes already noticed.

The prevailing diseases of educated females at the age of puberty are pre-eminently those of an hysterical character. The affection does not so much precede, or retard menstruation; it usually accompanies the first efforts of the system to bring about the change, and continues to exist with great obstinacy, and often to an alarming degree, for a length of time after; being renewed or aggravated at each succeeding period, and simulating, from time to time, almost every disease, of whatever type, of which the female

frame is susceptible. The approach of puberty is characterized, in such individuals, by an unwonted irritability of temper, fretfulness, dejection of spirits, singularity of manner, fits of laughing or crying for which no adequate cause can be assigned, a groundless dread of evil, disturbed and unrefreshing sleep; to which are added, palpitations, headache, nausea and loss of appetite, with great physical prostration. Symptoms of congestion supervene, with abdominal tumefaction, aching of the loins, and occasional swelling of the features or limbs. The first appearance of the menses is not unfrequently attended with an attack of hysteric convulsions, after which, should the discharge be furnished in sufficient quantity, the other symptoms soon undergo considerable modification, or altogether disappear.

The cause of this peculiar susceptibility to disease in the class of patients now under consideration, becomes a question of paramount importance; and is, without doubt, to be found in the faulty system of education pursued at boarding schools. The mental faculties are called into premature activity, and tasked to a degree beyond their power of endurance, and the mind is crowded with a mass of matter under the fictitious denomination of accomplishments, which Nature never designed that it should entertain; while the proper training of the physical constitution is totally disregarded. Moreover, the indulgence of a propensity, irresistably active at this period of life, to the reading of novels, romances, and works of a similarly vicious character, has likewise a very injurious tendency. Witness for instance, the violent and often dangerous paroxysms of hysteric emotions occasionally consequent upon the mere perusal of an affecting narrative, having probably no foundation save in overstrained analogy, or in fiction. These are agencies to which the unlettered are entire strangers, or which they experience but seldom, and only to a very limited degree.

It thus appears that an occupation of whatever kind, and wherever pursued, which requires no more than a moderate application of mere physical power for its performance, will bear a very favourable comparison in regard to its effect upon bodily health, with one in which the exercise of these faculties is neglected. The fact is, the muscles were designed for a purpose; and their due employment is no less necessary to the harmonious working of the economy of which they constitute an important portion, than for maintaining a healthy relationship with the objects of external nature. An employment requiring moderate and regular exercise, especially if pursued in an open untainted atmosphere, is of the first importance; while inactivity, whether the individual reside in town or country, is almost invariably followed by ill consequences. In no class of people is the menstrual function so healthily performed as in those necessitated to earn the means of subsistence by personal exertion; provided always that the employment be suitably adapted to the constitutional powers of the individual; while the converse of this is known to obtain with those in easy circumstances. Amongst farm servants and others, the period of puberty is seldom accompanied by any derangement of the general health; but in the higher grades of society, it forms an era of the greatest anxiety, and is often the commencement of serious and irreparable organic mischief.

Sometimes change of employment, especially when entailing removal to a different locality, appears to influence the function of menstruation in regard to its developement, attended or not by other effects upon the general health. A young married Irish woman, in her nineteenth year of age, attended by her mother, was admitted a patient of the Manchester Lying-in Hospital, October, 1845. The mother, a very intelligent person, stated that she began menstruating on the day of her marriage, at eighteen years of age. The discharge

continued about four days, and recurred at regular intervals without impediment, during the two following years. At the end of this period she found herself pregnant for the first time. She removed with her family to Manchester in 1837, and soon procured employment for her eldest daughter, then ten years old, in a cotton-mill. Five months afterwards this girl began to menstruate without an unfavourable symptom, and continued to do so regularly. The second daughter, a year and nine months younger, was afterwards employed in a similar situation, and commenced menstruating also at the age of ten years and a half: the change was equally favourable in both.

M. B. a nursery-maid, in her twentieth year of age, becoming the subject of chlorosis, solicited medical assistance in the winter of 1844. She was a tall, irritable, lymphatic subject of lax fibre, daughter of healthy parents. Her illness, which had already existed nine months, began in the manner usual in chlorotic complaints; the symptoms being afterwards aggravated periodically, and attended from time to time with epistaxis or diarrhœa. Her prevailing complaints at the time of her application to me, were dropsical swelling of the belly and limbs, and palpitation. The treatment consisted in the exhibition of hydrogogue cathartics and chalybeates, which during the first few weeks appeared to be attended with benefit; but afterwards lost their power, and the improvement ceased to go on so favourably. She remained in her parents' house eight or nine weeks, when circumstances obliged her to contribute towards her own maintenance by personal exertion. By the intercession of a benevolent individual, easy employment in a cotton-mill was procured for her, although her health appeared too feeble for even a moderate degree of bodily exercise. From the first week of her efforts in this new occupation, her health showed signs of improvement; and four weeks later, at the age of nineteen years and a half, the

menses appeared for the first time. Her health was soon perfectly restored. Thus, gentle exercise in an atmosphere of genial and uniform temperature, effected that which a long course of medical treatment had failed to accomplish.

The effect of factory labour upon the scrofulous constitution is decidedly favourable as compared with the general result. The average of unfavourable cases is perhaps scarcely different, numerically considered, from what occurs under other circumstances; but the case is certainly different in regard to the nature of the affections usually met with in the one class and the other; the symptoms being generally much milder in the mill-operative than in those engaged in home and out-door occupations. This can alone be attributed to the dry and temperate state of the atmosphere which it is found necessary to maintain in these establishments for the successful working of some of the manufacturing processes; such a condition being peculiarly adapted to the delicate organization of the scrofulous constitution. Were it not for the sudden and unavoidable exposure to cold on leaving the mills, and the long hours during which the hands are detained at work without rest, I feel persuaded that a more efficient or more valuable auxiliary could scarcely be employed in these latitudes, in the treatment of some strumous affections, than this artificial climate is capable of affording. Numerous facts might be adduced in support of this assertion. Scrofulous diseases, in whatever shape they manifest themselves, and especially those which affect the superficial glands, the large joints, and some of the bones, are but seldom met with in so aggravated a degree in the factory operative as in the domestic or farm servant, and they are infinitely more manageable in the former.

Certain habits and pursuits, independently of any regular employment, are pernicious, or otherwise, according to their nature and the extent to which they are indulged. Among

these may be mentioned late hours, frequenting crowded and heated apartments, irregularity in times of eating, reading or conversing upon subjects which have a tendency to over-excite the imagination, too close application to the study of music, drawing, needle-work, and other sedentary pursuits, and the neglect of the necessary bodily exercises, the omission of which for a time is inevitably followed by inaptitude for them, and consequent loss of health. A multitude of evils are clearly traceable to inattention to that wholesome discipline which all have the power, to some extent, of practising, and without which the integrity of the physical as well as of the moral constitution cannot long be sustained. A systematic arrangement of each day's business, whether as regards necessary labour, pleasurable relaxation, or devotional exercise; and also in matters of a more trifling nature which are usually looked upon as too insignificant for consideration, but which, nevertheless, are made to absorb some portion of time for their performance; is of the highest importance, and would, if duly observed, contribute in no small degree to the well-being of the individual. It is needless to make further comment upon the influence which these circumstances exercise upon the health of the system at the period of puberty.

Of Climate as influencing the Developement of Puberty.

The question relating to the influence of climate in determining the period of puberty has, at various times, engaged the attention of medical writers both in this country and abroad. It is generally believed that in hot countries, women become capable of bearing children at an earlier age than in the more temperate latitudes. Haller states that in the southern parts of Asia, menstruation begins as early as the eighth or tenth year, and in central Europe and parts further north, at the age of twelve and thirteen and upwards, and later still in the colder regions. The same view is entertained

by Denman, Burns, Dewees, Müller, and the majority of obstetrical and physiological writers; by Linnæus, Humboldt, and other eminent naturalists and historians. Denman discovers an analogy between the effects of heat upon fruits and the human female in respect to menstruation, and believes the function to commence early or late in proportion to the warmth of the climate. "In Greece and other hot countries," says this writer, "girls begin to menstruate at eight, nine, or ten years of age, but advancing to the northern climates there is a gradual protraction of the time 'till we come to Lapland, where women do not menstruate 'till they arrive at maturer age, and then in small quantities, at long intervals, and sometimes only in summer." It is to be regretted, however, that the enquiries which have been hitherto instituted upon this subject in southern climates have failed to produce testimony sufficiently ample upon which to found a fair and satisfactory comparison with the results obtained in our own. No statistical data are anywhere adduced in support of the assertions above referred to; nor has Denman given any authority upon the question relating to the early puberty of the Asiatics contained in the first part of the preceding quotation; while the latter part of it, as noticed by Dr. R. Lee, is evidently erroneous, having been founded upon a mistake committed in the translation of the passage in Linnæus' Flora Lapponica to which it refers.

Casual observations upon this and similar subjects are occasionally met with in the writings of travellers whose express intentions were the investigation of matters of a totally different nature. Such fragmentary portions of natural history however, are not the less valuable on this account; but rather of the greater importance, as being less liable to the fallacies arising from preconceived notions or prejudice; and especially so in the cases of early non-medical travellers, as the subject had not been mooted in their time as one of

scientific disputation. The observations of Bruce, for instance, in reference to the early puberty of the Abyssinians and other neighbouring tribes whose history he was at infinite pains to unravel, must be esteemed as particularly valuable; and notwithstanding the mingled incredulity and ridicule with which his account of the manners and customs of these people was first received, and the illiberality displayed towards him by a host of ignorant critics, the statements of all subsequent travellers in eastern Africa, abundantly testify to the correctness of this author's descriptions, and he is now universally admitted as one of the most accurate and faithful of modern observers. Speaking of the manner in which he obtained his information he says: "Bills of mortality there are none in this country. I shall therefore say in what manner I attained the knowledge I have just mentioned. Whenever I went into a town, village, or inhabited place, dwelt long in a mountain, or travelled journeys with any set of people, I always made it my business to inquire how many children they had, their fathers, next neighbours, or acquaintance. This not being a captious question, or what any one would scruple to answer, there was no interest to deceive; and if it had been possible that two or three had been so wrong-headed among the whole, it would have been of little consequence." [1] He says of the people of Achmim, a town in that part of Upper Egypt called the Thebaïde: "The women seldom marry after sixteen; we saw several with child who they said were not *eleven years* old. Yet I did not observe that the men were less in size, less vigorous and active in body than in other places. This one would not imagine from the appearance these young wives make. They are little better coloured than a corpse, and look as old at sixteen as many English women do at sixty, so that you are to look for beauty here in childhood only." Again, concerning the Agows, a

[1] Travels in Egypt, &c., vol. i. p. 287, Lond. 1799.

people in Abyssinia near the source of the Nile, it is stated: "The women are generally thin, and, like the men, below the middle size. There is no such thing as barrenness known among them. They begin to bear children before *eleven;* they marry generally about that age, and are marriageable two years before. They close child-bearing before they are thirty, though there are several instances to the contrary." [1]

The following is from the work of Major Harris, recently published: "Like other eastern nations," says this writer, "the Amhára have no family name. They soon ripen and grow old. Girls become mothers at the early age of *twelve,* and are decayed before the summer of life has well commenced." [2] Mr. F. W. Daniel, in his observations on the Medical Topography of the Bights of Benin and Biafra, says: "Parturition in the negro female has been generally represented to be an easy process, and not attended with much danger; such however, is not invariably the case. Inquiries among the different tribes have amply satisfied me, that in many instances the parturient woman has perished from want of a little timely assistance in those complex and preternatural labours which have hitherto been supposed to be of less frequency among them than in females of more civilized countries. Puberty in these regions commences about the *age of eleven or twelve* years, and sometimes much earlier." [3] And, assuming as a general rule, that marriage is not usually consummated before the female exhibits signs of developement of the child-bearing aptitude, which is the more likely to be the case among communities which have formerly enjoyed, if they do not in the present day enjoy, the advantages of a tolerably well organized government; it is not improbable that a precocious womanhood is equally common among

[1] Travels in Egypt, vol. iii. p. 739.

[2] On the Highlands of Æthiopia, during an eighteen months' residence of a British Embassy at the Christian Court of Shoa.

[3] Medical Gazette, July, 1845.

the Syrians as among the tribes already noticed, as appears from the following statement: "This woman had two daughters, one of whom, on becoming the tailor's wife, at about *twelve* years of age, interested Lady Stanhope so far as to make her extend her favours to her husband." [1]

Within the last few years, much valuable information on this subject has been contributed by Mr. Roberton, whose inquiries, so far as they have been prosecuted, go to show that the opinion formerly and almost universally entertained respecting the very early puberty of some tropical races, is at least problematical, if not altogether erroneous. Mr. R. has published, in the North of England, and the Edinburgh Medical and Surgical Journals, and in the London Medical Gazette, several elaborate and highly interesting papers, containing a number of facts intended to prove that the age at which puberty commences in the African female is but little at variance with what is observed in the European; and that the parallel between the vegetable and female constitution assumed by Denman does not hold good. The essay published in the London Medical Gazette for July, 1842, has a table furnished by the Rev. John Elliott, superintendant of the Moravian Missions in the island of Jamaica, showing the respective ages at which twelve negresses of that island began to menstruate, and those of nine others in whom it had not commenced at the time the report was made. Of those in whom the menses had already appeared, one was 16, three 15, three 14, three 13, and two 12; and of the other nine cases in whom the change had not appeared, one was 14, two 13, one 12, one 11, one 10, one 9, and two 8 years of age.

The same paper contains a letter from Dr. Nicholson, of the island of Antigua, who says, that he has never met with a case of menstruation before the twelfth year, either in white or black people, but he has met with a few in both at that age;

[1] Memoirs of Lady Hester Stanhope, by her Physician, vol. i. p. 95.

that menstruation commences most frequently in the fourteenth and fifteenth years, and no difference is observed in this respect between the whites and blacks: the latter are more liable to chlorosis than the former; that he had never met with a case of pregnancy occurring before the *menses* had appeared; and that a regular monthly discharge during pregnancy, in every way resembling the *catamenia*, is not unfrequently met with in the island. Mr. Roberton has also, more recently, furnished an interesting addition to his former contributions, in an account of the age of puberty in the Hindustanese and the natives of Madeira:[1] from which it appears that the age of puberty in the inter-tropical regions, may be fixed at about *thirteen* years; being a year and ten months below what he conceives to be the average for this climate.

But the results obtained by Mr. Roberton respecting the age of the first menstrual crisis in this country, and those recorded by myself in the preceding tables, exhibit a difference of about nine months. This disparity I can account for only on the supposition that his inquiries may possibly include a greater proportion of educated females than mine; the menstrual advent taking place, as was already shown, considerably earlier in these than among the labouring and uneducated classes. It appears also, from Mr. R.'s report, that the per-centage of instances of puberty in this climate occurring before the age of eleven years, amounted to 3·15; while those happening in a corresponding period in my own records, do not exceed 0·225 per cent.

The foregoing calculations certainly exhibit striking differences in the results; especially when it is considered that they were both obtained from similar sources, and within a compatively short time of each other. The circumstance just mentioned however, might, perhaps, be thought sufficient to account for the difference. The class of individuals admitted

[1] See Edinburgh Medical and Surgical Journal, vol. lxvi. pp. 56 and 281.

at our public institutions are so liable to misrepresent or exaggerate any accounts referring to their own personal history, that the strictest investigation is necessary in order to arrive at anything approaching the truth; and, uneducated persons, advanced in years, can scarcely be expected to be at once prepared to give an account of the events of early life, so correctly as to render them worthy of implicit credence. Fully aware of this difficulty, I set out with the intention of receiving no statement which could not be properly attested. Whenever the person inquired of happened to have a mother or other relative or acquaintance, in any way informed of her early history, these persons were also consulted; and where no such competent persons were found to clear up any doubts as to the correctness of the information given, the case was rejected. On this account, I feel no hesitation in offering the facts now collected, as faithful reports in reference to the age of puberty in the town of Manchester. Assuming therefore, the age of the first menstrual crisis in tropical countries to be as already quoted from Mr. Roberton's papers, and that which I have obtained to be also correct for this climate, the average difference between the one and the other will be about two years and a half.

The causes of a precocious puberty among the inhabitants of southern climates, have been variously accounted for. It has been said that the lax state of morals which prevails among the African and other equally ignorant and debased tribes, as well as in most southern countries, is one of the principal causes of those instances of premature sexual developement so much more frequently noticed among them than in our own country; and that similar occurrences would be as common in the latter as in the former, were the morals of the people equally degraded. I fear such an allegation is but little in accordance with what is really the fact. It may be fairly questioned indeed, if civilization has, until very recently,

contributed in any material degree, towards the mitigation or suppression of that species of vice arising from undue excitement of the sexual passion; or if the sense of moral responsibility which it is the intention of civilization to promote be ever sufficiently inculcated at the period of life in question, to counterbalance or restrain those passions which outweigh all others in their effects upon the moral constitution. This observation has reference especially to the male sex, whose educational training has, until within a very short period of the present day, been everywhere faulty.

Among uncivilized communities, and especially among the negro race, the sexual appetite is believed to be naturally stronger and less under control than with Europeans; and that its unrestrained indulgence is a principal cause of the precocious developement of the generative aptitude in the female. The first part of this assertion is contradicted by all impartial observers who have written on the subject, of whom may be mentioned Mr. Gurney and Dr. Channing. "They are undoubtedly sensual," says the latter; "and yet the African countenance seldom shows that coarse, brutal sensuality which is so common in the face of the white man. I should expect from the African race, if civilized, less energy, less courage, less intellectual originality than in our race; but more amiableness, tranquility, gentleness and content." With regard to freedom of intercourse, it is a mistaken idea to suppose that any considerable restraint exists in this respect, among some orders of society, in this country. On the contrary, I can assert, on the authority of facts, that the case is very different; having myself met with no small number of instances of disease, arising from impure connection, long before the appearance of the *catamenia*. Many cases of prostitution have occurred to my own knowledge, and no doubt similar instances are often met with by other practitioners, one, two, or three years before menstruation had

commenced, and even before the premonitory signs of pubescence had manifested themselves.

I am inclined to believe, notwithstanding the multitude of evils consequent upon the deplorably degraded social condition of uncivilized communities, and especially such as the revolting and iniquitous custom of promoting infant marriage, prevalent among the Kulin orders of the Hindustanese, and so justly commented upon by Mr. Roberton; that climate does, nevertheless, exercise considerable influence in determining an early sexual developement in hot countries, although not perhaps to the extent that it was formerly believed to do. The probability is certainly strengthened by analogy; instances of a remarkable change in the uterine functions having been produced by removal from one climate to another, — their activity being increased under the influence of tropical heat, and subdued or modified under that of a more temperate latitude. Similar effects are also seen to accrue from exposure for a length of time to a high artificial temperature, as may be occasionally witnessed among our manufacturing operatives; examples of which have been already mentioned in this volume.

CHAPTER III.

DISEASES OF MENSTRUATION.

The various physical and psychical manifestations which characterize the age of puberty, and the functional phænomena of the generative organs, ought to be simultaneous in their developement: the latter is a condition necessary to the completeness of the change. It was already shown, however, that at least twenty-two per cent. of women do not enjoy this happy combination of circumstances at the period in question; and of the rest, a considerable proportion suffer, more or less, from functional derangement afterwards; giving rise in both instances, to an assemblage of symptoms constituting the disease known as *amenorrhœa.* When this happens as a consequence of undue retardation of the menses, it is denominated amenorrhœa from retention, or *emansio mensium;* when supervening upon functional embarrassment after the change has become fairly established, it constitutes the state known as amenorrhœa from suppression, or *suppressio mensium.*

Sometimes the menstrual effort is attended with great suffering and inconvenience, although the bodily health may remain tolerably comfortable during the free interval. This state is called *dysmenorrhœa,* — painful or difficult menstruation; and depends, generally speaking, upon a morbid condition of the secernent apparatus of the uterus: the affection is sometimes also of a purely nervous character,

owing its existence to want of harmony between the altered action of the organs immediately implicated, and the newly-awakened sympathies in parts contiguously or remotely connected with them. Or, the organs of generation, as respects the menstrual function, may, under some circumstances, remain perfectly quiescent after the physical indications of puberty have been fully accomplished, without producing, for a time, any prejudicial effect upon the general health. Such a state of the system is met with in persons where the vascular plethora finds relief through the medium of compensating discharges, occurring periodically, from some distant part of the body, constituting what is usually termed *vicarious menstruation*. These abnormal evacuations consist in bleeding from the nose, bronchial tubes, stomach, or bowels, or from the surface of an ulcer, or cavity of an abscess; and in temporary augmentation of a natural organic product, as nasal, bronchial, vaginal, or urethal catarrh, diuresis, diaphoresis, or colliquative diarrhœa.

Lastly, the menstrual discharge may be inordinately profuse, assuming often the character of an alarming hœmorrhage, under which form it is recognized as *menorrhagia*, or more properly *metrorrhagia*. These five orders, into which the subject has been subdivided, comprehend the principal affections commonly known as the diseases of menstruation, each of which may be briefly exemplified in succession.

Retention of the Menses.

There are two forms under which amenorrhœa from retention, may manifest itself. The one, when the generative organs remain inactive after the physical developements of puberty have been perfected, and consequently, no fluid is secreted; the other, when the organic function is duly performed to a certain extent, but the escape of the product is hindered by mechanical impediment. The latter condition,

which is one of extreme infrequency, I deem it unnecessary to dwell upon in this place, such a state of parts, in the pubescent female, never having occurred under my notice.

Disease happening as the result of retarded menstruation presents a multitude of shades, varying according to circumstances already mentioned. In its simplest form it is very frequently met with; and although requiring no treatment beyond such means as are commonly within the accomplishment of domestic management, and is seldom therefore brought under the notice of the medical practitioner; it may nevertheless claim a brief allusion in passing. The indications usually are, a feeling of languor, depression of spirits, and loss of relish for all ordinary food, pursuits, and enjoyments. After a few days, symptoms of a more palpable character show themselves, as restlessness and unrefreshing sleep, aching of the back and limbs, head-ache, swelled face, catarrhs, and other ephemeral disturbances such as arise from exposure to cold, error in diet, or over-exertion. The connection between these manifestations and the impending change is frequently not recognized until revealed by the action of some simple remedial agent; and during or after the operation of an emetic, a brisk purgative, a diaphoretic draught, or the use of the warm bath, menstruation suddenly commences, and all appearances of disorder speedily vanish.

The menses will sometimes appear unexpectedly during any exhilarating play or exercise, or after a strenuous bodily effort by means of which the circulation becomes suddenly accelerated, as in the following examples. A young lady, in her sixteenth year, of the bilious temperament, had been in a feeble state of health several months. In April, 1845, she was removed from school to one of the watering places in the west of England; and by midsummer was so far recovered as to be thought capable, after the holidays, of resuming her school duties; although she was still languid, drowsy, and

irritable. One day, whilst romping with a group of her school-fellows in a hay-field, she became greatly over-heated, and after running violently down a steep bank, a profuse uterine hœmorrhage came on, and continued, in a moderated degree, several days. This was the menstrual advent. Her health was soon afterwards established, and the phænomena of menstruation recurred at the proper periods.

A girl, seventeen years of age, of the sanguine-lymphatic temperament, began to menstruate after several months' indisposition, the prevailing characters of which were, aching of the back and limbs, a dropsical state of the feet and ankles, swelling of the face, pyrosis, and periodical *epistaxis*. These symptoms, although regarded as the result of retarded menstruation, were at no time so severe as to induce her friends to solicit professional aid. Jumping from the top of a flight of steps was recommended as a remedy, and practised with benefit. The manner of exercising was to repeat the leaps for a length of time together, in quick succession, until the body became over-heated, and then to lie down in a warm room. The menses first appeared during one of these efforts, and continued to recur at proper intervals afterwards.

A farm-servant, of slender proportions and irritable frame, (now upwards of twenty years of age, and lately under treatment for a dysenteric affection,) began to menstruate after a period of indisposition, in her seventeenth year. While carrying a heavy pail of milk upon her head, she became greatly over-heated by the weight of the burthen, and fell down in a swoon. She was immediately carried to bed, and ordered to take a quantity of hot gruel, with gin, which brought on a copious perspiration, and the menses appeared for the first time before she arose. Her health and strength became speedily restored.

The form of amenorrhœa most commonly requiring medical aid, is characterized at the onset by decided indications

of general or local plethora, in conjunction with a vitiated state of the secretions. This is clearly manifested by the quickened circulation, hurried breathing, increased sensibility of a part, an evident tendency to local determination, elevated temperature of the skin, occasional rigors, thirst, and a feeling of *malaise,* indicative of that state of active congestion which invariably precedes inflammation. If the constitution of the patient be naturally robust and vigorous, or more than ordinarily excitable, the invasion of the attack will be sudden and severe; but when a want of constitutional power is evident, the vital functions being feebly performed, and the temperament of a nature approaching the phlegmatic, the symptoms are usually of a chronic character from the beginning.

The premonitory signs above-mentioned, after having continued a few days, are succeeded by a severe rigor, or rather a succession of alternate rigors and feverish heats, sometimes traceable to exposure to cold, imprudence in dress, or error in diet. This stage is followed by general febrile reaction, attended by local congestion and pain, decided functional impediment, and other indications of the existence of inflammation, the character of which will be determined by the temperament of the individual, hereditary pre-disposition, diathesis, the nature and effects of previous disease, and the particular circumstances under which the patient may happen to be placed at the time. The remedial measures indicated are obvious. The first object will be to moderate the inordinate vascular action, to tranquilize the exalted sensibility of the brain and nervous system, and to rectify and restore the vitiated secretions. The ultimate aim should be especially directed to the menstrual functions, their establishment and due performance being essential to the immunity of the system from future mischief.

Case IV.

Amenorrhœa; Jaundice; Cure.

Miss T., a young lady, fourteen years of age, of the bilious-sanguine temperament, exhibited (in November, 1844,) symptoms of ill health, of which the principal were, nausea, loss of appetite, languor, drowsiness, disturbed sleep, headache, and pain and sense of distension of the abdomen and right side of the body, with yellowness of the skin, which soon merged in jaundice. She was treated with emetics, aperients, and other remedies, which however, were productive of no mitigation of the symptoms. After the exhibition of two or three doses of a mercurial aperient, salivation was unintentionally produced, upon the occurrence of which an improvement was almost immediately observed, accompanied, quite unexpectedly, with a plentiful menstruation for the first time. The health was soon afterwards restored, and has since continued uninterrupted.

Case V.

Retarded Menstruation; Pulmonary Congestion; Cure.

A young woman, fifteen years of age, a silk throwster, began to menstruate under the following circumstances. For several months the external signs of puberty had been apparent, and the menses were daily expected. One day whilst at work, she was suddenly seized with difficulty of breathing, which obliged her to return home immediately. On my arrival at her residence she was gasping for breath, and complained of pain and tightness across the lower part of the chest. The features were swollen and livid; the pulse fluttering and indistinct. She was immediately bled from the arm to the amount of sixteen ounces, which afforded instant relief. The abdomen, which had for some time previously been tumid and painful, was then covered with a hot poultice

of linseed-meal; and she was ordered to take five grains of calomel combined with the same quantity of antimonial powder. A profuse perspiration soon followed, and menstruation came on for the first time during the ensuing night. Her health was perfectly restored in a few days afterwards.

Case VI.

Retarded Menstruation; Hysteria; Cure.

In March, 1845, I was requested to see Miss F., a young lady, aged thirteen years and a quarter, of an extremely excitable temperament, and possessing singular talents for music and the languages. On the evening previous to my attendance, while performing her part in a duet upon the pianoforte, in the presence of company, she was suddenly seized with giddiness and inability to accomplish her part correctly, a piece which she had before been accustomed to play with facility. She retired precipitately from the apartment to her bedroom, where she was found weeping hysterically, from vexation and a sense of shame at her failure. During the night she became feverish and delirious, mistaking her sisters and parents for other persons; and early the following morning, a violent paroxysm of hysteric convulsions came on, after which she slept. On awaking, a saline aperient was administered, which relieved the bowels of a large quantity of hard fœces, and she soon appeared more collected. The fits however, were several times repeated, and during the intervals she complained of aching of the hips and thighs, sense of distension and weight of the abdomen, and headache. She had never menstruated; and although her mother had commenced at a much later period in life, the similarity of the symptoms in the present case to those she remembered herself to have experienced, and to those previously observed in her elder daughters, impressed her with the idea that the change in this instance was impending. The patient was

ordered a hot hip-bath at night, which could not, however, be effieiently managed, on account of her extreme restlessness. A croton-oil liniment was therefore used to the loins, and the saline aperient already mentioned, repeated. The paroxysms beeame less severe at eaeh return, and at the end of the fourth day from the invasion of the symptoms, the menses appeared for the first time, and she was shortly afterwards restored to health.

In February, 1846, eleven months after the above report, I was requested to see the same patient. She had for several weeks previously shewn a strangeness in her manner. Her appetite for food had been unusually good, sometimes voracious; and she had been oceasionally much exeited and boisterous, laughing immoderately at trifles, and weeping without cause. The menses had been seanty and irregular for the two or three previous periods. It was at this time several days past the term of their recurrenee, and the discharge had not appeared. At first she refused to see me, and sereamed violently when she heard my footsteps on the stairs, although we had previously been on friendly terms. She was persuaded, however, to dress and see me in the drawing-room; but had no sooner got upon the staircase than she insisted upon being allowed to return to her room. Her mother and nurse resisted this, and a seuffle ensued, on hearing which I advanced to near where she was standing, and entreated her to eome down. After a few moments' hesitation, she darted past her attendants, re-entered her bed-room, and bolted the door. I desisted from further entreaty, and ordered that an aloetic aperient should be administered; this relieved the bowels freely, and was attended by diminution of the exeitement. The liniment before mentioned was again used to the loins, and ten leeches were applied to the hypogastrium. On the following day she was eonsiderably more calm, and met me with a peeuliar smile on my entering the drawing-

room. She informed me in an under tone, in a strange sort of jargon, mixed up occasionally with words both French and Italian, evidently fearing lest her attendants should comprehend her intentions, that it was in contemplation to confine her in some dismal place, and that she would feel greatly obliged if I would allow her to escape with me. I appeased her by saying that I had a visit to make at a little distance, and would call for her on my return. On the following day she appeared perfectly collected, but reproached me for neglecting to do as I had promised. The hot hip-bath was now effectively employed, and the menses came on during the following night. The discharge, fortunately, was plentiful, and she was soon restored to health.

Case VII.

Retarded Menstruation; White-swelling of the Knee; Peritonitis; Cure.

M. J. B., of the sanguine temperament, sempstress, began to menstruate at eighteen years of age, after three years of ill health. The date of her illness was referred to an accident which she received about the age of fifteen, while enjoying herself, in company of a number of young people, in pic-nic fashion in the country; a species of pleasurable relaxation considerately provided for Sunday-school classes by the wealthier members of most of our religious establishments of the town during the Whitsuntide holidays. Whilst at play, she fell violently upon the gravel, by which the skin on the fore-part of the right knee was slightly bruised, and shortly afterwards the whole joint became considerably swollen. The external wound soon healed, but the tumefaction did not for a considerable time subside, and then not completely, and only for a short time. The swelling returned, accompanied with general indisposition, the more prominent symptoms of which were frequent rigors, aching of the loins, irritable

bladder, violent headache, and sometimes bleeding at the nose, which always afforded relief. It was soon manifest that these disturbances became aggravated periodically, at intervals of three or four weeks, being accompanied, after a few repetitions, by a leucorrhœal discharge. The case, on account of these indications, being now regarded as one of retention of the menses, means were adopted with a view to bring about the natural evacuation. No proper medical advice was at first solicited; the treatment consisting in the administation of a variety of simple remedies, popular as emenagogues among the lower classes. The health became gradually more and more enfeebled, the symptoms increasing in severity at each succeeding accession; but being considerably relieved always by the leucorrhœal discharge, which was indeed a vicarious menstruation, continuing four or five days each time; and also by the occasional epistaxes. The affection of the knee was looked upon as *white-swelling;* and during the latter part of the treatment an issue was made at the outer side of the joint, and kept open several months. At the age of eighteen, when I first saw her (in April, 1845,) she was labouring under a violent attack of peritonitis, with high symptomatic fever, brought on by exposure to a shower of rain while being drawn about in a hand-carriage. Leeches were applied to the abdomen, and other active measures adopted, under which the acute symptoms were subdued, and the menstrual discharge came on in its natural form during convalescence. The affection of the knee gradually disappeared afterwards, and in the course of three months the health was quite restored.

Case VIII.

Retarded Menstruation; Chronic Strumous Abscesses; Cure.

The following case did not occur under my notice, but the account is well authenticated. The patient was first under

my treatment for an uterine affection, attended with threatenings of abortion, in the sixth month of her first pregnancy, in March, 1846. S. J., of the bilious-lymphatic temperament, and scrofulous appearance, employed, before marriage, as a mill operative, began to menstruate at nineteen years of age, after having been in delicate health more than five years. At the end of her thirteenth year she had inflammation of the tendinous sheath on the palmar aspect of the right thumb, and before an escape was formed, the matter had extended as far as the fleshy part of the flexor muscles of the fore-arm. Here the abscess, having burrowed among the deep-seated parts, made its way to the surface, discharging a large quantity of flocculent pus. The suppuration continued abundant, becoming ichorous and offensive, and it was then discovered that a considerable portion of the radius was denuded and carious. In the course of time a sequestrum of this bone, involving about three inches and a half of its shaft, separated, and was removed through the ulcerated opening. The wound soon assumed a more healthy aspect, and the healing process commenced. Long before it became closed, however, another abscess formed on the outer side of the fore-arm near the elbow, discharging abundantly the same kind of matter; but the subjacent bone was not affected. Subsequently more abscesses appeared one after another in different parts of the same limb. Thus two, at least, of the abscesses were always open, and a constant and copious suppuration maintained without intermission, for more than five years—until the age of nineteen and a quarter—when the menses appeared for the first time, and the wounds dried up and healed. During the whole of this period the general health was very infirm, the system exhibiting all the appearances of chlorosis. There were periodical accessions of hectic symptoms, accompanied with pain of the loins and hypogastrium, and occasionally with slight leucorrhœal discharges. At these times also, the

wounds, for several days together, assumed a more angry and irritable aspect, the suppuration becoming at the same time more active, and the discharge being often mixed with blood. The limb is covered with a number of large, depressed, unsightly scars; the thumb contracted and immoveable, and the power of rotation of the radius destroyed.

The analogue of this case is not unfrequently met with in practice. The physical signs of puberty were already apparent, and the uterine organs undoubtedly prepared for their peculiar office on the invasion of the symptoms before the age of fourteen. This circumstance was never thought of however, until made evident by the periodical aggravation of the symptoms and the occasional appearance of hœmorrhage from the wounds. Had the accumulated matter been released in the first instance, by a free and timely opening into the sheath of the flexor tendons, all the subsequent troubles, it is presumable, might have been avoided. An oversight in diagnosis, or perhaps neglect or obstinacy, on the part of the patient, was the occasion, in the short space of a few hours, of an amount of organic mischief which entailed years of suffering, and required an unaccountable expenditure of constitutional power for its reparation. The treatment adopted consisted in applications of various kinds to the wounds, and occasional aperient medicines. A chalybeate preparation was also now and then administered, but never long enough continued to be productive of benefit. The ultimate accomplishment of the menstrual change was attributed to the effects of an infusion of *rue* and *penny-royal*, recommended by a neighbour.

Case IX.

Retarded Menstruation; Hysterical Epilepsy; Cure.

M. P., of the nervous-lymphatic temperament, a domestic servant, had laboured under a succession of catarrhal affections, during which she was troubled with difficulty of

breathing, cough, and palpitation. On recovering from one of these attacks, she was seized with hysteric convulsions, which lasted two or three hours, and left her greatly enfeebled. By the aid of some simple remedies she gradually recovered, and was able to resume her duties. After a few weeks, another and more violent attack of convulsions came on, the fits being repeated several times a day for three or four days in succession, and she again recovered. The attacks recurred, with increased severity, every three or four weeks, for ten months, when they recurred almost daily, and she was admitted a patient of the Lying-in Hospital, in November, 1845. She was seventeen years of age, and had never menstruated. At the time of her admission, the fits were so sudden and frequent as to render it unsafe for her to go out unattended. In infancy and childhood her health was delicate, the right knee having for several years been the seat of "white-swelling." Her present complaints, in addition to the convulsive affection, were, severe pain of an intermittent character attacking one side of the head; pain along the spine and especially over the sacrum, and of the feet and ankles; irritable bladder; capricious appetite, flatulence with distension of the abdomen, and irregular bowels. The fits were always preceded for a few seconds by a sense of coldness which commenced about the hips and loins, and rapidly extended along the spine until it reached the head, when she suddenly fell down in a state of insensibility. The paroxysm over, she generally slept for a length of time, or if awake, was languid and drowsy for several hours.

The treatment consisted in the repeated application of leeches to the hypogastrium, the hot hip-bath, and poultices to the abdomen; and in the administration of a mild saline aperient repeated at intervals of a few hours. The accessions soon became less frequent and severe, and of shorter duration, and at the end of a week the general health appeared to

be somewhat improved; but no vaginal discharge had appeared. She was then ordered to take three grains of the iodide of iron combined with one of quinine, every eight hours, and an aloetic aperient every third morning. After pursuing this plan of treatment a fortnight, she was greatly improved in health and strength, having had no recurrence of the fits during several days. At this period, from experiencing severe oppression and sense of fulness about the abdomen and loins, the hot hip-bath and poultices were again resumed; these had been only twice used when the menses appeared for the first time, and continued in sufficient quantity from three to four days. She has since menstruated regularly.

Suppression of the Menses.

The menstrual function is liable to be impeded or totally suspended from various causes, at any time after its commencement, whatever may have been the state of the health previously, or however favourably the first change shall have been effected. It may take place slowly and gradually; the discharge becoming less and less in quantity, or repeated at longer intervals, and altered in its character during several successive periods, until at length it ceases altogether to appear. Amenorrhœa manifesting itself under these circumstances, owes its origin, generally speaking, to causes which, like those alluded to in the preceding section, have a constant tendency to impair the constitutional tone and to impoverish the blood. They are generally traceable to an unsuitable employment, frequent errors in diet, breathing an impure air, pernicious habits, anxiety, disappointment, watchfulness, fatigue; to fever, inflammation, chronic local affections, and diseases of an infectious or of a specific nature.

But by far the most frequent and the severest forms of disease, arising from suppression of the menses, are those which supervene upon the sudden and total arrest of the

discharge during the term of its activity, or upon its prevention from causes operating upon the system at the moment when the function should, according to the natural periodical usage, become awakened. These causes are, exposure to a cold or damp atmosphere, intense grief, violent fits of passion, acute, inflammatory, and infectious diseases, and the use of certain medicines. The following cases will serve to illustrate some of the diseases consequent upon this form of amenorrhœa.

Case X.

Suppression of the Menses; Acute Peritonitis; Result fatal.

P. C., fourteen years of age, of the bilious temperament, employed as a small-ware weaver, had menstruated five or six times, the advent of puberty having been favourably accomplished. One evening in March, 1841, during the menstrual period, she got severely wet on returning home from her employment, and neglected to take due precautionary measures to avoid the consequences. In the course of the ensuing night, she was seized with a severe rigor which lasted nearly two hours, and which was followed by high feverish reaction, distension and violent pain of the abdomen, and complete arrest of the menstrual discharge. No professional aid was solicited until the end of the third day, when she was found labouring under peritonitis in its most aggravated form, and which was only partially and temporally relieved by depletory and other active measures. She died on the seventh day from the seizure.

On inspection of the body the omentum was found thickened, crepitant, opaque, and slightly adherent to the subjacent viscera. The peritoneum was thickened and variably injected everywhere, excepting in the gastric, hepatic, and adjacent parietal regions. The small intestines at the lower part of the abdomen were in one adherent mass, covered by a false membrane, and completely glued together. That

portion of the peritoneum reflected over the pelvic viscera was deeply injected, thickened, and mottled with a number of red isolated patches. The abdominal cavity contained a quantity of reddish, milky serosity, in which floated a number of grey albumen-like shreds. The walls of the uterus were thickened and congested, and its cavity contained a few small light-coloured clots. The right ovary, which was considerably larger than the left, presented a recent cicatrix, beneath which was a cavity occupied by a clot of blood the size of a large pea.

Case XI.

Suppression of the Menses; Inordinate Obesity; Partial Paralysis; Recovery.

M. T., of the lymphatic-sanguine temperament and strumous diathesis, began to menstruate about three months before she was sixteen years of age; she continued regular eleven or twelve months; then ceased for two years. During this period, her health did not materially suffer, but she grew immoderately stout and puffy. She was removed to Manchester at the age of nineteen, soon after which, menstruation recommenced, and her health became vigorous: the discharge however, was scanty and of short duration. About six months after her removal, she experienced a sudden attack of illness, accompanied with suppression of the menses, in consequence of exposure to the weather and of neglecting the necessary precaution of changing her dress. During the ensuing night, (Dec. 1, 1844,) she was kept awake by a deep-seated aching of the head, and occasional vomiting, accompanied with sense of numbness extending over the right side of the face and head, and difficulty in opening the right eye. I saw her on the following day, when the whole right half of her face appeared shrunk, the eye small, the mouth awry, and the tongue, on being protruded, turned to that side. She

deseribed a dull aching pain of the baek part of the head and behind the ears, with languor and drowsiness. A free abstraction of blood was immediately practised from the arm, and a saline aperient administered. In the evening the hot hip-bath was used, and an antimonial given at bed-time. On the following day she expressed herself better, but slight pain remained behind the right ear, for the relief of whieh six leeches were applied. The use of a mild saline aperient was prescribed and continued through the day, and the hip-bath and antimonial were repeated at night. After pursuing this plan of treatment a few days the numbness and pain disappeared, and the tone of the facial muscles was, in great measure, restored; but the menstrual discharge did not come on. Three weeks afterwards, at the approaeh of the next erisis, the hip-bath was again employed, and an active aloetic aperient administered at intervals, for a few days, during whieh the menses appeared, and the health eontinued undisturbed.

Case XII.

Suppression of the Menses; Hysteric Fit; Chlorosis; Cure.

C. H., aged twenty years, of the bilious temperament, a faetory-operative, was admitted a patient of the Lying-in Hospital, for chlorosis, January 10, 1846. She menstruated, when in health, every fourteen days, continuing each time seven days, so that the discharge and the free interval oeeupied alternate weeks. This continued without interruption from its eommencement at fifteen years of age, to the end of her eighteenth year, and she was the whole time in the enjoyment of excellent health. One day, whilst at work, and without assignable eause, she was seized with a fainting fit, since which she has not menstruated: she attributes her ill health to having eontinued at work during the rest of the day without ehanging her clothes, whieh had become eompletely drenched with water, ineonsiderately thrown upon her for

the purpose of recovering her from the faint. She has laboured under chlorosis ever since. At nineteen years of age she suffered an attack of jaundice, for which she was seven weeks under treatment as an in-patient of one of the Hospitals, and subsequently became an inmate of the same Institution during three months for a recurrence of the same affection.

At the time of her application for treatment, (January 10,) she appeared to be in the last stage of chlorosis, of which the leading symptoms were great muscular emaciation and debility, pallor of the skin, a fixed pain of the left side of the chest, oppressed breathing, alarming palpitations, constant, short cough, œdema of the legs, hands and face; periodical accessions of hectic, and, occasionally, a profuse nasal catarrh, the product of which was sometimes mixed with blood. The attention had of late been more especially directed to enlargement of the abdomen, accompanied with tension and soreness; these symptoms which had made their appearance within the preceding few days, were regarded as the immediate precursors of dissolution.

The treatment consisted in the application of four leeches to the hypogastrium, followed by fomentations and poultices. One grain of calomel and the same quantity of opium were given every night at bed-time, and a saline draught containing an aperient dose of sulphate of magnesia every four hours. The leeching was repeated on the third, and again on the fifth day. At the end of a week the symptoms were considerably mitigated. She was then ordered to take a dose of the *mist. ferri co.* thrice daily, and a pill containing two grains of *pil. hydrarg.* and three grains of *aloes* every night, after taking five doses of which, the mouth became affected. The mercurial was consequently suspended, and a small quantity of *decoct. aloes* ordered to be administered in combination with the above-named chalybeate. A fortnight after

the beginning of the treatment, her condition having become greatly improved, she had a slight rigor accompanied with aching of the back and limbs, and recurrence of the abdominal enlargement. These indications of vascular determination towards the uterus were treated by means of the hot hip-bath, and a moderate sized blister applied to the hypogastrium; the chalybeate preparation also, with aloes, was continued. On the 27th of January, seventeen days after the date of the first report, the menses appeared, and continued to flow in sufficient quantity for three days: they have since been regularly repeated. The tonic treatment was continued about a month longer, when she was discharged cured.

Case XIII.

Suppression of the Menses; Asthma; Cure.

B. A., of the phlegmatic temperament, sempstress, menstruated for the first time, at sixteen years of age, after a period of ill health. During her fifteenth year, the physical proportions became rapidly developed, and the functional change was daily looked for. The menses, however, did not appear, and at the age of fifteen and a quarter, the health began visibly to fail. She complained of great lassitude, loss of appetite, irregular bowels, disturbed sleep; pain and swelling of the feet and ankles, aching of the loins, "gravel pains," and enlargement of the abdomen. Medical treatment was had recourse to; but the symptoms increased in severity, especially the dropsical swelling, which soon implicated the upper as well as lower extremities, and the face. She now exhibited hysterical symptoms in occasional attacks of asthmatic breathing, accompanied with palpitation and faintness. A few weeks later, the breathing became more painfully affected, and decided asthma, to which a tendency was inherited from her father, set in. For seven or eight months she was under medical treatment, which effected no beneficial

change beyond temporary alleviation of the more urgent symptoms, and she was removed to the sea-side, where, after a few weeks, the menses appeared for the first time, and she returned to town in good health.

After menstruating three or four times, the discharge was suddenly and totally arrested, through an imprudent exposure to the night air in a light dress, at the beginning of a menstrual period, and she was seized with a severe rigor, which was immediately followed by great oppression in the breathing, pain of the right side of the chest, and high feverish reaction. In this state I first saw her. She was ordered an emetic, composed of a scruple of powdered Ipecacuana root and the same quantity of sulphate of zinc, which afforded instant relief. She then took a pill containing four grains of calomel and one grain of opium, and was ordered an aperient draught of the compound decoction of aloes on the following morning. A copious perspiration came on during the night, accompanied by a plentiful menstrual discharge, which continued the usual number of days, and left her quite well. It was deemed prudent, however, to pursue a course of alterative and tonic treatment a little longer. This consisted in the administration of two grains of extract of cinchona combined with the same quantity of iodide of iron, in form of pill, thrice daily, and a dose of the aloetic aperient every third or fourth morning, until the following menstrual period, after which she appeared remarkably strong and healthy.

Case XIV.

Suppressed Menstruation; Apoplexy; Congestion of the Cerebral Veins and Sinuses.

Miss F. J., a young woman, nineteen years of age, of the sanguine-lymphatic temperament, in respectable circumstances, had enjoyed excellent health through life, until within a few days of her death. She began to menstruate at

the age of fifteen years and a quarter, without an unfavourable symptom; and the function continued to be regularly discharged every twenty-seven or twenty-eight days, (reckoning always from the day of commencement of one period to that of the next following:) the discharge occupied from four to five days at each return. On Thursday, the 25th of February, 1847, death deprived her of an aged and affectionate relative, with whom she had resided, as an adopted child, since she was an infant, and from whom she received a considerable bequeathment of property. On the day of this occurrence, the menses should have appeared, according to previous custom; she experienced the usual premonitory symptoms of the functional effort, but the discharge did not appear. This failure was attributed to the fatigue and anxiety which she had endured for several days previously. Two days afterwards, (Saturday,) other relatives arrived at the house of the deceased, claiming the privileges of a nearer kindredship than that of the legatee; and during an altercation respecting the disposition of deceased's possessions, the girl was seized with violent palpitation, ending in syncope, from which, however, she shortly recovered. In the evening of the same day, she complained of headache, lassitude, and general *malaise;* for the relief of which, and with a view to encourage the suspended menstrual function, the hot foot-bath and a dose of medicine were employed. On the following day, (Sunday,) she experienced violent pain of the head and loins, with a sense of distension and oppression about the lower region of the abdomen: the menses were still absent. During the ensuing night, she was restless and feverish; and, about three hours after midnight, was seized with violent hysteric convulsions, accompanied with a sense of choking. This first attack was said to have lasted several minutes, and to have left her extremely languid, but sensible. After a short interval the convulsions returned with increased severity,

continuing to recur in quiek succession during the rest of the night; and in a few hours, the patient was found to be totally uneonseious, even during the intervals of quieseenee from the spasmodie affection.

I first saw her nine hours after the seizure, and found her quite insensible, and incapable of being roused. The features were tranquil and of a leaden paleness; the eye was elosed and free from vaseular turgescence, the pupil widely dilated; the teeth were firmly elenched, and the tongue partially protruded between them; the breathing was noisy, but not hurried or stertorous; the pulse, beating seventy-two times in the minute, was full, but not free. Whilst prosecuting my inquiries, a violent paroxysm of tetanie eonvulsions eame on, implicating, prineipally, the muscles of the abdomen, and, less powerfully, those of the thighs, legs, and arms; but producing scareely a pereeptible ehange upon the expression of the face. During the fit, the breathing beeame somewhat aeeelerated and more noisy; and a little froth began to be blown from the mouth as the contractions abated. The abdominal museles in the supra-pubal region were gathered into the form of a cireumseribed tumor the size of a ehild's head, whieh became a little, although but very slightly diminished, by evacuation of the bladder with the catheter: this cireumstance created a momentary suspicion of the existenee of pregnaney. Examination *per vaginam*, however, immediately eleared up the doubt; the os uteri being small, and linear; its lips smooth and even; and the whole organ light, loose, and of the unimpregnated size. Moreover, the tumor in question, losing its eircumseribed character as the spasm subsided, was soon lost in a diffuse fulness of the whole hypogastrie region, in whieh state the parts remained during the rest of the quieseent interval. The treatment eonsisted in free abstraetion of blood from the arm; sinapisms to the abdomen and the calves of the legs (to whieh parts she was

said to have referred as being the seat of uneasiness and pain during several days previously), evacuation of the bowels by enemata; and vesication of the nape of the neck. No remedy could be administered by the mouth, as the power of swallowing was entirely suspended. The bleeding appeared to produce some temporary mitigation of the convulsive movements, but did not at all diminish the frequency of the paroxysms; and there was not a gleam of consciousness either then or afterwards. The pupil was perfectly insensible to light, and dilated to a ring; the breathing became gradually more laboured and stertorous; froth issued from the mouth, and the convulsions ceased two hours before the moment of dissolution. In twenty-four hours from the commencement of her illness she died.

On *post-mortem* inspection, thirty hours after death, the brain, including the cerebellum and medulla oblongata, was perfectly healthy. It was not more than usually vascular; and there was no effusion whatever, either of blood or serum into its substance, or within the ventricles, or in any part of the cranial cavity. There was not a trace of meningeal inflammation. All the large sinuses, however, and the veins which terminate in them, were distended to their utmost limit. The two lateral, the torcular Herophili, the straight, and the longitudinal sinuses were gorged with black, firmly coagulated blood; and the veins terminating in the superior longitudinal sinus were similarly distended and occupied, lying in the inter-convolutional *sulci* like tortuous earth-worms, equalling in their capacity the calibre of an ordinary writing quill.

The thoracic and abdominal organs were all healthy.

The *os uteri* was about a third of an inch long and quite closed; the labia were of the ordinary healthy dimensions, and free from congestion. The body of the uterus was turgid; its right half, both anteriorly and posteriorly, was deeply

injeeted with blood, offering a striking eontrast with the opposite half of the organ, whieh was pale, with the exeeption of a small spot, here and there, of vaseular turgeseenee. The eavity of the uterus was more dilated than it is usually observed to be when perfeetly quieseent. Its mueous lining presented a most beautiful arrangement of the vaseular eapillaries, whieh were finely injeeted with what might have been a slightly-eoloured serum, giving the most delieate rose tint that ean well be eoneeived.

The whole plexus of vessels approaehing the uterus and Fallopian tube, enelosed between the folds of the broad ligament, were, on the side corresponding to the turgid moiety of the uterus before-notieed, distended with red blood; the great mass of them were observed to take a eourse parallel to the Fallopian tube, but were eonneeted together by innumerable transverse and oblique branches; the whole forming a beautiful erimson band of net-work about an ineh and a quarter in width, extending between the *ovarium* and the *uterus*. The Fallopian tube and *corpus fimbriatum* on the same side were turgid, of a deep erimson eolour, and appeared as if eonsisting entirely of an aggregation of injeeted eapillaries. On the left side the vaseular turgescenee was less eonsiderable, being eonfined prineipally to the outer extremity of the Fallopian tube, and adjaeent parts.

The ovaries were greatly enlarged. They were both eovered with eieatriees, beneath some of whieh were remains of yellow bodies, in different stages of deeadenee. The left presented, at its upper part, a Graffian vesiele, which appeared to have arrived at a stage of developement beyond what is generally eonsidered maturity. It was elevated to at least five-sixths of its entire dimension above the surfaee of the ovary in which it was imbedded; and through its beautifully transparent walls, the yellow germinal spot eould be distinetly seen. Trunks of vessels of extreme minuteness,

emerging from the surrounding *stroma,* mounted upwards upon the walls of this vesicle, subdividing into a multitude of smaller ramifications, which could be seen only by the aid of a powerful magnifier. A few of the loops constituting the *corpus fimbriatum* were adherent to the surface of the ovary close upon the base of the ripe Graffian vesicle, as if designed to ensure the unerring insertion of the one within the other at the moment when the organic act of ovular separation was intended to be accomplished. It is more than probable, that temporary adhesion of the floating *infundibulum* of the Fallopian canal to the vicinity of each matured vesicle, previous to its evacuation, takes place on every such occasion; the bond of union becoming dissolved so soon as the purpose shall have been fulfilled.

The above case illustrates a form of disease consequent upon hysteric disturbance, which occurs much more frequently than has ever yet been acknowledged. Seldom does it happen, it is true, that a fatal termination is so speedily consummated, although such cases are by no means uncommon; and in numerous instances, the issue, however protracted it may be, is nevertheless equally certain and disastrous.

Hysteric affections are generally said by writers to be unattended with danger. Speaking of this form of disease, a modern author says: "It is a dreadful announcement to have to make to a father or a mother, that their child is *epileptic:* whereas *hysteria,* though it is sufficiently distressing, is attended, in nine hundred and ninty-nine cases out of a thousand, with no ultimate peril either to mind or body.[1] On the contrary, my belief is, that a greater amount of irreparable mischief has its origin in this class of affections in the adult female than in derangement of any other system of

[1] Lectures on the Principles and Practice of Physic, by Dr. Watson, published in the London Medical Gazette, for 1841.

organs, not excepting those of digestion and assimilation. The menstrual function, when healthily discharged, removes from the circulating mass, a quantity of fluid, prepared for a specific purpose, over and above that which is required for the ordinary uses of the economy. During the activity of this organic effort, the whole system acquires a peculiar susceptibility of morbid action: should the evacuation be incomplete, the superabundant material is determined upon the internal parts, and disease is the result. Under such circumstances, congestion, followed by inflammation of the lungs, the liver, the bowels, the bladder, the kidnies, or of the fibrous tissues, is frequently originated; and a similar condition of the nervous centres, induced by the same cause, is very commonly the proximate precursor of convulsive affections, epilepsy, paralysis, or of sudden death; together with the host of morbid manifestations vaguely referred to spinal irritation, examples of which are of daily occurrence.[1] The case which follows is further corroborative of the opinion now stated.

Case XV.

Suppressed Menstruation; Erysipelas; Cerebral Congestion; Cure.

T. G., a nursery governess, twenty-eight years of age, of robust habit of body, had for several years been subject to erysipelatous inflammation. She first had the complaint at sixteen years of age, as a consequence of retarded menstruation; and it recurred at intervals afterwards, but never, except on one or two occasions, with any considerable degree of

[1] The morbid specimens, illustrative of the preceding case, were exhibited before the Members of the Manchester Pathological Society, at their meeting on the 4th of March, 1847; and the like opinion was expressed, in reference to the frequent fatality of menstrual metastasis to the brain and spinal marrow, by the eminent and learned Dr. Knox, of Edinburgh, who was present on the occasion in question, and who offered some very interesting observations upon this class of diseases.

severity. The attacks generally occurred during a menstrual period, on the occasion of the function being a little delayed or embarrassed, or when the discharge was furnished in less than the ordinary quantity; and sometimes after exposure to cold or damp weather. The part most commonly affected was one side of the face, the forehead, or the throat; and occasionally, the leg, or ankle.

On the 6th of March, she experienced pain in the region of the spleen, and aching of the loins; symptoms which always admonished her of the near approach of the menses. The discharge, however, did not appear as expected, and on the following day she had pain, heat, and tumefaction of the throat, for which a gargle was prescribed. Three days later, the menses being still absent, she experienced a severe attack of erysipelas of the throat and face, attended with considerable fever; but after the operation of an active aperient and the use of the foot-bath, the menses appeared, the patient expressing herself at the same time greatly relieved. The discharge, however, which was very scanty, ceased after ten or twelve hours, and was immediately followed by aggravation of all the symptoms. There were alternate rigors and high feverish reaction; the features became frightfully swollen and disfigured, and assumed a leaden purple tinge; the pulse was full, frequent, and labouring; she was extremely restless, then rambling and delirious, and soon fell into a state of incomplete coma. A free abstraction of blood from the temporal and post-aural regions restored her to consciousness, and eight grains of calomel combined with the same quantity of antimonial powder, were administered at one dose. Twelve hours afterwards, a profuse menstrual discharge came on and relieved the symptoms in an extraordinary manner; placing the patient at once out of danger. She subsequently recovered without an unfavourable symptom.

Difficult Menstruation.

Dysmenorrhœa,—painful or difficult menstruation, has its origin in a morbidly irritable state of the uterus, or of those parts of the nervous system in immediate relation with it. When the function is healthily performed, the menstrual discharge commences, for the most part, without previous warning, and is attended with but little inconvenience throughout the period. In dysmenorrhœa, on the contrary, it is often accompanied with an amount of disturbance sufficient to render the health infirm for greater part of the succeeding interval, and the system has no sooner recovered from the effects of one invasion than another reduces it to the same condition as before; so that the health, under such circumstances, can scarcely be said to be at anytime perfect. In this manner, an individual often endures, through a great portion of life, a constant succession of morbid paroxysms, each succeeded by its period of lingering convalescence, equal in severity and the effects produced upon the constitution, to the ravages of some acute inflammatory diseases. The system, thus deprived of that power of endurance necessary to sustain it in health under ordinary circumstances, is equally ripe for the invasion of contagious or infectious maladies, as pre-eminently susceptible of those agencies so frequently resulting in destructive organic changes. The disturbance generally commences one, two, or more days before the discharge appears; sometimes it is simultaneous with it; but it may come on in the middle, or more rarely towards the close of the period. Its forms are as various as the dispositions of those who experience its effects.

When dysmenorrhœa consists in a morbidly irritable, or inflamed state of the lining membrane of the uterus, the disturbance comes on at an early stage of the period, beginning with rigors and flushes of heat, pain of the back part of the

head and upper portion of the cervical spine, and of the loins and hypogastrium; the latter sometimes assuming an intermittent character, simulating the incipient pains of labour. In some, the suffering becomes considerably mitigated on the appearance of the discharge; but not unfrequently it is continued during greater part of, or even throughout the whole period. In such subjects the expulsion of those membranous substances first noticed by Morgagni, and since regarded, by many, as the product of conception, are occasionally observed. The late Dr. Denman was of opinion that such formations were thrown off at each menstrual period in cases of dysmenorrhœa, whether the woman had conceived or not; and it is quite certain that they occur as often in the virgin as in the married female.

In individuals possessing a highly excitable nervous system, although the uterus itself be perfectly healthy, the discharge, in cases of dysmenorrhœa, is first announced by a train of symptoms differing materially from those already mentioned; as nausea and vomiting, excruciating pain of the head and along the spine, palpitation, difficulty of breathing or of swallowing, violent spasmodic affections of the stomach and hypogastrium, cramps of the limbs, temporary diminution or loss of power of one of the senses, of a limb, or of a set of muscles, hysteric convulsions, and fits of an epileptic character. In the one or the other form, the menstrual discharge may be either scanty or unusually abundant; normal in its properties, or otherwise.

Case XVI.

Paroxysms of Hysteric Fainting; Regular Menstruation; Disappearance of the Ailment after Marriage.

A lady, of very irritable frame, but particularly active and lively, began to menstruate at twelve years of age, while suffering under an attack of excruciating pain of the back and

lower part of the abdomen, accompanied with alarming fainting fits and convulsive struggles, the paroxysms following each other in quick succession. The discharge, which was very profuse, of a dark appearance, and occasionally mixed with clots, was regarded, at the onset, as accidental hœmorrhage; the idea of its being the natural menstrual secretion was not entertained at the time, and especially so as the patient happened to be unusually diminitive in stature. The discharge, still attended with great suffering, continued several days, both subsiding at the same time. In less than a month afterwards, the whole train of symptoms re-appeared in exactly similar form, the pains and fainting fits preceding the discharge two or three days. In this manner the phænomena were regularly repeated every month, the suffering being equally intense at each return. Various means were resorted to with a view to procure relief; but little benefit seemed to be afforded by anything except opium. This remedy was administered in doses of a grain every eight or twelve hours, for two, three, or four days at a time, commencing on the first approach of the symptoms. She menstruated regularly without a single interruption from the commencement at the period first mentioned, until marriage, in the early part of 1844, since which time she has borne one living child at the full term of gestation, and has not since experienced an indication of the dysmenorrhœal affection. She has never had a leucorrhœal affection. The discharge was always abundant, continuing from four to five days each time.

Case XVII.

Menstruation accompanied with Hysteric Convulsions; Induration and Fissured Ulceration of the Labia Uteri.

E. C., of the nervous-sanguine temperament, when seventeen years of age, was seized, during the night, with a fit, accompanied with convulsions, which continued more than an

hour, leaving great lassitude, headache, and general uneasiness. Several similar attacks came on during the two following days, in one of which the menses appeared for the first time, when the fits and other ailments soon left her. Three months afterwards, menstruation having been regular and the health tolerably good in the interim, she was again seized with fits, which were several times repeated, but subsided on the appearance of the discharge. From this time, a similar attack occurred at each succeeding period until the age of eighteen years and a half, when she was married, a step which had been strongly urged by her friends as a means of cure. The complaint however has increased, both in severity and the frequency of its recurrence, ever since. She was placed under my care in February, 1845, at the age of twenty-five, being in the fifth month of her seventh pregnancy. Her second, third, and fifth pregnancies terminated favourably at the full term of gestation; the other three were abortions, each occurring in the fourth month of the process. The fits are more frequent during pregnancy than at other times, each attack coming on monthly, at times corresponding to the menstrual periods; there are usually four or five during the night, and two or three in the day, for three or four successive nights and days, when they subside, leaving a free interval of about three weeks. The seizures were said to come on always at the change of the moon, but I ascertained this not to be the fact. She was formerly a person of good and clear intellect, but has now completely lost her memory. Her history was given by her mother, who was in constant attendance upon her. This patient was under treatment at the above-named date for threatened abortion. The *labia uteri* were indurated; the anterior labium being greatly enlarged, and projecting in a conical form low down into the vagina. A deep ulcerated fissure occupied each *commissura labiorum*.

Vicarious Menstruation.

Vicarious menstruation is a form of dysmenorrhœa for which Nature provides her own remedy, by withdrawing from the system, through a channel not originally adapted for the purpose, that excess of circulating fluid which, if retained, would certainly lead to injurious consequences. Such deviation however, from an established law, is too often accomplished at the expense, in greater or less degree, of functional disturbance, followed by impairment of the health generally, and not rarely resulting in lesion of structure of a serious and persistent character. Persons in whom the function of assimilation is particularly active, may bear, for a time, the suspension of the menstrual discharge without experiencing any disturbance of a calamitous nature; the vascular plethora being relieved by a regular and timely distribution of the principles with which the blood has become surcharged; which takes place in the manner of adipose deposition and general textural increase, an example of which was given in Case XI. But where the system does not possess the faculty of thus disposing of its unwonted fulness, the peculiar tendency to local determination soon becomes manifest, rendering prompt remedial interference necessary to prevent the invasion of disease, which is the other inevitable alternative.

The organs through which compensating discharges most frequently take place, are the mucous membranes and the skin; the looseness of texture of the first, the high vascular and nervous organization of both, and their constant exposure to external influences, rendering them especially liable to functional aberrations from comparatively trivial causes. But any other organ may occasionally be the seat of vicarious disease; and besides periodical hæmorrhage from the nose, mouth, bronchial tubes, alimentary canal, or the skin; catarrhs, diarrhœa, or eruptive disorders; an attack of

rheumatism, asthma, or cellular inflammation; abscesses, dropsical effusion, or vicarious ulcers; may be the means of relieving the system of, what the Hippocratic doctrine styles, its peccant humours. The following cases may serve to illustrate the character of this class of affections, and the remedial measures commonly adopted in their treatment.

Case XVIII.

Absence of Menstruation; Vicarious Epistaxis; Cure.

R. D., aged thirteen years and a half, of the sanguine-bilious temperament, flax-dresser, had been in a feeble state of health, with violent headache, and alternate chillness and flushing of the surface, for ten weeks. One day, whilst at work, (in June, 1843,) during a severe accession of pain of the head and feverish excitement, bleeding from the nose came on, which afforded instant relief. The blood continued to flow profusely, in spite of repeated attempts to arrest it, and with only now and then a short interval of cessation, for three or four days, leaving the patient greatly enfeebled, but free from headache. Three or four weeks afterwards, (in July,) the pain and flushing returned, accompanied with aching of the back, distension of the abdomen, and vomiting, during which the nasal hœmorrhage reappeared, and continued at intervals for several days. Its cessation was followed by complete mitigation of the other symptoms. A third repetition of the phænomena as above described, was experienced the following month, (August,) succeeded by great debility, for which she was prescribed chalybeates. The patient was then removed to the sea-side, whence she returned much improved in health and strength. About a month after the last named attack, (in September,) a similar train of symptoms again made their appearance, for the relief of which the hot hip-bath was ordered to be used; five grains of the *pulv. Jacobi* combined with the same quantity of *hydr. cū crætâ*, were

ordered to be taken at bed-time, and an aperient draught of the decoction of aloes the following morning. The bowels and skin were freely acted upon, and during the second night of the treatment the menstrual discharge appeared for the first time, and has since been regularly repeated.

Case XIX.

Absence of Menstruation; Vicarious Leucorrhœa; Cure.

In January, 1842, a young woman, aged twenty years and a half, of the bilious-lymphatic temperament, a domestic servant, solicited relief for chlorosis. Her health had been delicate since the age of fourteen, at which period she complained of great languor, constant pain of the back, distension and pain of the abdomen, accompanied with a slight increase of the vaginal mucus; this being, at first, just sufficient to make her sensible of a discharge, which, after continuing several days, completely ceased. Three or four weeks afterwards, a similar discharge took place in increased quantity, continued a few days, and ceased as before. In this manner the phænomena were repeated monthly for six years, continuing three or four days at each recurrence, and leaving a free interval of twenty-three or twenty-four days; during which, she remained for a time in the enjoyment of tolerable health. After a few repetitions, the secretion became considerable in quantity, was always colourless, and was invariably preceded and attended by aggravation of the pain of the loins, distension of the abdomen, and lassitude. At the time of her application for relief, the leucorrhœal discharge had ceased two or three months — the only times she had known it to be absent since its first appearance at the age of fourteen. For a length of time previously, her health had been declining, and she then had swelling of the limbs and abdomen, palpitation, and asthmatic breathing. The skin was extremely sallow, the secretions

vitiated, the appetite impaired, and the bowels very irregular. She was put upon a course of alterative and tonic treatment, consisting principally of chalybeates combined with small doses of aloes; and for some time, at the commencement, she took a grain of *hydr. submur.*, combined with five grains of *pulv. Doveri*, every night. The health gradually improved, the swelling subsided, but she passed over the following period without having any appearance of the customary discharge. The remedies were continued, however, and at the approach of the next monthly crisis, the hot hip-bath was used for several nights in succession, when the natural menstrual discharge appeared for the first time, and continued from three to four days, as the leucorrhœal discharge was wont to do. It was afterwards repeated at regular intervals.

Case XX.

Absence of Menstruation; Vicarious Discharge from the surface of an Ulcer; Chlorosis; General Dropsy; Cure.

M. W., a tall, languid, phlegmatic woman, employed as domestic servant, had entire absence of the menses at twenty-six years of age, and was chlorotic. At fifteen years of age, she exhibited the usual physical developements of puberty, but the menses did not appear; and from this time the general health rapidly declined, and the whole subcutaneous areolar tissue, from the face to the feet, became dropsical. The legs especially were greatly swollen, the veins distended and painful, one of which, near the outer ankle, gave way, and was soon formed into an extensive ulcer. The discharge from this outlet, commonly profuse, became periodically more abundant, and at these times was mixed with blood. She was, from time to time, under medical treatment, without deriving any but temporary benefit. At the age of eighteen and a half, having, during several weeks, been an in-patient of a hospital,

she was removed into the country, where her health became greatly improved; the swelling was considerably reduced, and the ulcer diminished in extent, although it did not heal. There also remained some enlargement, with pain and oppression, of the abdomen. Soon after her return to town, however, all the symptoms were aggravated, and she was shortly in the same state as formerly. On being received a second time into Hospital, an issue was made upon the inside of the right thigh, and kept open three years and a half.

When first I saw this patient she was twenty-six years of age, and appeared to be in the most aggravated stage of chlorosis; the prevailing symptoms were, extensive general dropsy, with great tumefaction of the abdomen, and frequent attacks of palpitation. A flabby-looking, callous, varicose ulcer, occupied a large space on the outer aspect of the right leg above the ankle; the discharge from which was very abundant, being, as before stated, periodically increased in quantity, and occasionally mixed with blood. The treatment consisted, principally, in the administration of iodide of iron and decoction of cinchona bark, with mercurial inunction upon the abdomen and thighs. The dose of the iodide was at first two grains three times daily; but the quantity was gradually increased until the dose was five grains. In five or six weeks, the improvement was remarkable; the dropsical symptoms having almost entirely disappeared. During a few weeks' residence at the sea-side, under the beneficent auspices of the Southport Bathing Charity, her health and strength became perfectly restored: she menstruated, for the first time, at the age of twenty-six years and a quarter. The discharge came on suddenly after taking a sea-bath, and continued in great profusion for more than a week. She has since menstruated regularly, and enjoyed excellent health.

Case XXI.

Undue Retention of the Menses; Periodical Diarrhœa; Cure.

S. B., of the nervous-sanguine temperament, a domestic servant, had a severe attaek of diarrhœa, without assignable cause, at sixteen years of age. During childhood she had been subjeet to a similar eomplaint. The purging eontinued five or six days, and, either by the aid of medicine, or, more probably, from natural eauses, it subsided. Three weeks afterwards, she experienced a recurrence of the symptoms in an equal degree of severity; whieh, however, after continuing five or six days, subsided as on the former occasion. A similar aeeession, equally severe, took place monthly, continuing about the same number of days each time, until the age of seventeen, when the menses appeared for the first time, and reeurred twiee, at intervals of a month, during whieh period she was free from the bowel affeetion. After this, however, there was complete suppression of the menses for a year and nine months, during the whole of whieh time the attaeks of diarrhœa came on as they had done before. I first saw the patient at this crisis, my opinion having been solicited respeeting the advisability of having her removed to the sea-side. For a length of time she had taken the *misturi ferri co.*, with some benefieial effect upon the general health; but the bowel complaint continued to reeur. I strongly urged the adoption of the eourse proposed, recommending at the same time the continued use of the chalybeate medieine. During her stay at the sea-side, in the neighbourhood of Liverpool, her health and strength improved daily; and the menstrual change was aecomplished without further difficulty.

Sueh are some of the forms under which compensating evaeuations afford relief to the system when labouring under the pressure of menstrual plethora. The nature of the affeetion will vary according to the temperament or peculiar

susceptibility of the individual. The finely organized textures of the sanguine subject predispose to hæmorrhages and inflammatory and catarrhal affections; while dropsical effusions, diabetes, and augmentation of the other organic products, prevail in the lymphatic; local congestion, sometimes terminating in extensive suppuration, hæmatemesis, alvine fluxes, diarrhœa, and varicose ulceration, most commonly occur in the bilious variety; and a disposition to tuberculous deposit, chronic abscesses, indolent inflammatory affections of the mucous textures, and articular disease, will be found to prevail in those predisposed to scrofula. The nature of the employment or pursuit in which the individual happens to be engaged, hereditary predisposition, locality, season, and other fortuitous circumstances will, of course, operate in various ways in determining the particular form or severity of all these affections.

Some individuals suffer for years under what are denominated nervous disorders, which, from their periodical repetition, induce a habit in the brain and nervous system calculated to continue the phænomena, even after the exciting cause shall have ceased to exist. It is not unfrequently observed, for instance, that vicarious discharges, in persons possessing a highly developed brain, are accompanied periodically by spasmodic and convulsive affections, fits, palpitation, temporary loss of muscular power, or impairment of the senses, requiring at each recurrence the employment of active remedial measures; and after a certain time, the impression becomes so strongly fixed as to establish itself as a kind of "second nature." Witness for example, the repetition of the "hysteric passion," which was first developed during retention or suppression of the menses, continuing in greater or less intensity ever afterwards at the critical periods, although the menstrual function come to be duly discharged. Even during pregnancy, the same phenomena

will recur in such individuals, at times corresponding to the menstrual periods. An elderly lady, upon whom I am in occasional attendance, has been thus afflicted ever since the age of puberty; and the attacks not only continued until the menses finally ceased, but are still sometimes repeated, although she is upwards of sixty years of age.

Metrorrhagic Menstruation.

This term is applied to a peculiar condition of the organs of generation, or of the constitution generally, under which a greater amount of fluid is separated from the blood during the menstrual period than the system can afford, without inconvenience, to part with: it is also familiarly, although perhaps less appropriately, designated *menorrhagia.* The discharge is usually more or less clotted. Uterine hæmorrhage is frequently observed, however, under circumstances altogether unconnected with menstruation, constituting what may not inaptly be termed *metrorrhagia.* In this form, the discharge, which is seldom profuse, is not always pure blood, nor invariably mixed with clots; being more or less combined with a proportion of vaginal mucus, and often with pus, which, on inquiry, will be found in most instances, to have existed previous to the appearance of the hæmorrhage. Metrorrhagic discharges, for the most part, make their appearance suddenly on the application of an exciting cause, and commonly cease after a few hours, or a few days; they may be continued however, until the following natural menstrual period, or during several weeks or months: a constant dribbling of blood going on night and day without ceasing, and sometimes making fearful inroads upon the constitutional powers before it can be effectually arrested. Hæmorrhage, under this form, (which is the *stillicidium uteri,* or *menses stillantes,* of authors,) proceeds, in the majority of instances, from diseased surfaces about the neck or lips of the uterus; and seldom, probably never, from the interior of the organ.

Metrorrhagic menstruation may appear under three different aspects; although the division, which is altogether arbitrary, is of very little importance in practice. In the first place, the secretion may be simply augmented in quantity while it lasts, ceasing to flow at the completion of the period of its ordinary continuance; secondly, the discharge, being perfectly normal as to the quantity thrown off in a given time, may be too long continued; and lastly, the menstrual periods may be too frequently repeated, under which circumstance the discharge is, generally speaking, very variable in quantity. But from what has been already stated in the section which treats of the Periodicity of Menstruation, it will be seen how difficult it must be in many cases, to determine by the quantity or the duration merely of the discharge, at what point menstruation ceases to be normal, and when the function ought to be looked upon as a disordered condition requiring remedial interference. The quantity of blood evacuated at each period, and the length of time during which it continues to flow, are extremely different in different individuals, and vary considerably in the same individual at different times. And such irregularities moreover, however striking, are, in most instances, perfectly natural, and accord in a marked manner with the requirements of the system in its constantly fluctuating state of excess or deficiency of the circulating fluid, and upon its normal or morbid condition.

Metrorrhagic discharges are not unfrequently witnessed in young girls before the age of puberty; and they are by no means uncommon in those who have finally ceased to menstruate. In the former, such phenomena are usually associated with the hæmorrhagic diathesis; in the latter, with disease of the uterus, which, when not of a malignant character, consists in ulceration about the *cervix*, often the result of varicose inflammation; or of *endo-uteritis*.

The conditions predisposing to hæmorrhage from the uterus while unimpregnated, are, a morbidly irritable state of the organ and its appendages, often combined with plethora of the uterine vessels, which may be partial only, or may be extended throughout the viscus; inflammation of its peritoneal covering, of its substance, or of its lining membrane; a morbidly irritable state of its nervous apparatus; disease of the *ovaria,* or of the Fallopian tubes; and lastly, disease of the lower extremity of the uterus, which is found to exist in at least four-fifths of all the cases brought under treatment. To these may be added, a peculiar state of the system known as the hæmorrhagic diathesis, of which an example has been already cited at page 32 of this work. According to most authorities on this subject, accidental hæmorrhages are symptomatic of chronic inflammation of the uterus, — an expression too general and indefinite for practical purposes; to the presence of hydatids, polypi, mole, fibrous tumours, malignant degenerescence, or to displacement of the uterus. These conditions however, are of comparatively rare occurrence.

The exciting causes of metrorrhagia are numerous. Amongst them may be mentioned, laborious exercise; violent bodily efforts; falls, blows, bruises; mental emotion; exposure to an over-heated atmosphere, or sudden transition from one medium, to another widely different from it in temperature; the use of the hot bath; acute diseases, the critical periods of fever, gonorrhœa, syphilis; and the effects of medicines used in the treatment of these affections. The symptoms which immediately precede the discharge, are of a kind similar to those which ordinarily announce the approach of menstruation; namely, a sense of languor and drowsiness; tumefaction or pain of the breasts; fulness of the abdomen; aching of the loins, &c.

The treatment to be adopted in these cases will necessarily

vary considerably, according to the state of health of the individual, the circumstances under which the patient may happen to be placed, the nature of the constitution, the quantity and properties of the discharge, and the causes to which it is to be referred: because in some instances, immediate abstraction of blood may be called for; in others, the soothing plan, such as may be effected by the administration of opiates and other sedatives, is indicated; and sometimes a course of alterative and tonic treatment may be beneficially practised. There is no form of disorder in the management of which the nicest discernment and skill on the part of the practitioner is more fully called into requisition. In some instances, the hæmorrhage consists merely in a profuse, or prolonged, or a too frequently repeated menstruation. In such a case, for reasons already given, it is of the highest importance carefully to ascertain, before an active course of treatment is entered upon, whether some altered condition of the system, — as fulness of habit, local determination, or a peculiar state induced by the particular nature of the employment or other circumstance, does not necessitate such an evacuation for the well-being of the economy.

On the contrary, abnormal discharges of blood frequently come on during the early months of pregnancy; or supervene upon suspension or irregularity of the menstrual function, arising from other causes, and being accompanied with abdominal enlargement and the general indications of pregnancy. When this state of things happens in the young unmarried female, the investigation is often fraught with peculiar difficulty; the employment of the only means by which a satisfactory knowledge of the case can be arrived at, being obstinately objected to. And even should every facility for the procedure be afforded, whether the existence of pregnancy be substantiated or disproved; it is still one of the most delicate positions in which either patient or practitioner can be placed;

involving, on the one part, the discharge of a very disagreeable, difficult, and often thankless duty; on the other, sacrifice, to some extent, of character, and perhaps exclusion from society. For although the calumny which led to the investigation be proved to be unfounded, it is difficult to remove altogether the impression from the mind of the multitude: a woman's virtue cannot bear even to be suspected. Should an unfavourable opinion be pronounced and be found erroneous — for after the most rigid scrutiny, the ablest inquirer may fail to discover the truth — the mistake will never be forgotten, but will remain a blot upon his character ever afterwards. Under all circumstances, the practitioner cannot be too scrupulously guarded in delivering an opinion; and it should ever be his aim, however culpable his patient may be, to shield her fame, as far as is practicable, from the censorious taunts of an unfeeling public.

CHAPTER IV.

Last Menstrual Crisis.

The precise period of life at which menstruation finally ceases, called the last menstrual climacteric, is as uncertain as that of its commencement. It is most commonly observed to take place between the ages of forty and fifty, but occupies a much more extended range; it sometimes happens before thirty, and is not unfrequently continued until upwards of sixty: instances of regular menstruation have been met with indeed so late in life as seventy, and even to the extraordinary age of eighty years, and upwards. In January, 1847, I was invited by my friend Dr. Francis, at that time and for several years previously, resident medical officer of the Manchester Union Hospital, to see a woman, then an inmate of that establishment, who was still menstruating at the age of seventy-five years, and who stated that she had done so regularly, without interruption or embarrassment, ever since the establishment of the function at an early period of life; excepting sometimes during pregnancy and lactation. The following particulars, relative to this interesting case, were kindly furnished to me by Dr. F. —

"Margaret Goodwin, aged seventy-five years, a tall, spare, active woman, having the sanguine temperament predominating, was born in Manchester, and formerly employed in a factory.

"During many years past she has been a nurse in one of

the sick wards of the Workhouse, and has had frequent attention directed to the peculiarities of her case. The present account therefore, is worthy of every credit, as I have been made acquainted with it from time to time, whenever the old woman has been ailing, or has felt there has appeared some interruption to the regularity of the occurrence to be described: besides, she is a person of apparent probity and sense, wanting in the motives for giving an untrue statement. She states, that the first catamenial period occurred at the age of *thirteen;* it was preceded by slight indisposition; she lost her colour, and swelled in the belly, for which symptoms she took, at the recommendation of a neighbour, a quantity of water in which fragments of rusty iron had been boiled, and after a few doses of which the discharge came about.

"She married at the age of eighteen, and from that time until the end of her forty-third year, bore fifteen children at thirteen births; the twin pregnancies occurring among the earlier ones. Her husband died a few months after the birth of her last child: the first was born eleven months after marriage.

"It is remarkable that during every pregnancy, she continued to menstruate until the last month of the full time, the discharge being similar in quantity and character to that of the non-gravid state; and that the discharge reappeared, notwithstanding that she suckled her children, in two or three months after the birth of the child.

"The labours were always easy and natural; they were never followed by flooding or other untoward event, and seldom prevented her from quietly engaging in her ordinary duties. She thinks it an unusual thing, that after the first few pregnancies, she was always able to calculate with certainty upon almost the very day upon which labour would take place, by counting a month from the last catamenial period, and was thereby enabled to make preparations accordingly.

"Four only of her children arrived at maturity.

"With the exception of the pregnant periods just referred to, the menstrual discharge has suffered no interruption from its commencement until the present time, and there have been no particulars in which it has differed during the latter years of life from its state during her youth. At both times, it continued for three days; and now, as then, it is preceded and accompanied by a sense of lassitude and pain in the back, which apprise her of its approach. The character, too, of the discharge as it occurs now, does not differ either in appearance or quantity from that to which she has been accustomed throughout life.

"She further states that her mother, who attained to a great age, was the subject of the same peculiarity; continuing to menstruate until the close of life; and that she had always heard a similar account of her maternal grandmother."

A case, perhaps equally singular with the preceding, occurred recently, in a member of a family nearly related to myself; a lady, who died from natural decay, in March, 1846, at the age of ninety-one. She had the sanguine temperament predominating, was active and cheerful, capable of enduring severe exercise, and had enjoyed excellent health throughout life. She was married soon after the age of twenty, bore nine or ten children, and ceased finally to menstruate in her fifty-fifth year.

In February, 1845, thirteen months before her decease, having suffered for several weeks previously from distension and general uneasiness of the abdomen, aching of the loins, and slight dyspeptic symptoms, a quantity of blood, bearing all the characters of ordinary menstrual fluid, was observed escaping from the vagina, and at first occasioned considerable alarm. It came on in the night-time, an hour or two after she had taken, with the view of promoting perspiration, a cup of hot beer-whey, and it continued uninterruptedly three or

four days, then ceased; leaving the patient perfectly free, however, from the pain and uneasiness before complained of. About three weeks afterwards, a similar train of symptoms appeared; the discharge, preceded by the lumbar and abdominal uneasiness as on the former occasion, continuing from three to four days, after which she expressed herself completely restored. In this manner the functional phenomena were periodically developed at intervals of twenty-three or twenty-four days, during the remainder of her life; the health being in a good state the whole time, with the exception of some slight sympathetic disturbance at the critical periods. She died at the thirteenth or fourteenth accession, while the organic product was still escaping. On each occasion the discharge, both as to quantity, appearance, and the period of its duration, together with the premonitory and accompanying symptoms, were every way similar, so far as she was able to judge, to what they had formerly been during the activity of the catamenial function. An inspection of the body, after death, was not permitted.

I am at present (March, 1847,) in attendance upon a lady who has nearly completed her sixty-sixth year, and who has continued to menstruate in the usual manner until within six weeks of this date. Her first critical change took place in the fourteenth year, without difficulty. She bore her first child at twenty-two, and her last at forty-three years of age. In her forty-fifth year, she experienced suppression of the menses, caused by exposure to cold; this was immediately followed by *hemiplegia* of the left side of the body, and she did not recover the proper use of the left arm, and the full power of speech, until about eighteen months afterwards. In August, 1844, I attended her for a complaint of like nature, supervening upon catamenial suppression. The paralytic affection of the limbs, however, was only slight, and soon relieved; but there was obstinate torpor of the bowels, and

loss of power of the *detrusor urinæ*, rendering the employment of the catheter necessary. She is now again suffering under amenorrhœal symptoms; the abdomen being tympanitic, the bowels torpid, and the bladder inactive; with severe aching of the loins, and numbness and diminished power of the left arm and side of the face. This attack is referred to sudden arrest of the catamenial discharge before the completion of the usual term of its duration, which took place, from exposure to cold, during the first week of February of this year.

The causes which principally operate in determining the precise period of the last menstrual change are not very clearly understood. Some writers have stated, that if the first crisis happen at an early age, the second in the same individual will be protracted; and if the first be late, the last will be correspondingly early: according to others, the reverse of this is found to obtain. The period of life at which the individual begins to bear children, the number and kind of pregnancies she may have experienced, her state of health during the child-bearing period, the nature and severity of the diseases under which she may happen to have suffered; the various trials she has had to encounter, her peculiar temperament, the force of acquired habits, and hereditary predisposition, may each exert its share of influence upon the constitution at this particular period; and it is, doubtless, to the agency of one or more of these conditions, that the healthful continuance of the menstrual function, in many individuals, becomes prematurely arrested or interfered with. The following table has reference especially to this subject: —

TABLE V.

Showing the ages at which sixty-nine individuals, who surmounted the last menstrual crisis, began, and finally ceased, to menstruate; the state of their health on each

occasion; the number of their pregnancies, including abortions; and the prevailing temperament or habit of body of each respectively.

Progressive No.	Age at the first menstrual crisis.		Age at the last menstrual crisis.		No. of pregnancies for each.	Temperament, or habit of body.
	Commenced favourably.	Commenced with difficulty	Ceased favourably.	Ceased with difficulty		
1	14	—	23	—	2	Nervous-sanguine.
2	13	—	33	—	0	Sanguine.
*3	15	—	37	—	0	Bilious.
4	13	—	37	—	8	Nervous-sanguine.
5	14	—	38	—	3	Bilious.
6	—	19	—	40	12	Bilious.
7	16	—	40	—	3	Lymp.-sanguine.
8	—	17	40	—	7	Nervous-sanguine.
9	16	—	—	40	6	Bilious-sanguine.
10	15	—	42	—	13	Nervous-sanguine.
11	12	—	44	—	3	Lymp.-sanguine.
12	16½	—	—	44	11	Lymphatic.
13	—	18	45	—	7	Lymp. Strumous.
14	14	—	45	—	22	Lymphatic.
15	14	—	45	—	8	Nervous-bilious.
16	16	—	—	45	12	Sanguine.
17	12	—	—	46	7	Bilious.
18	16	—	46	—	13	Sanguine.
19	18	—	46	—	9	Bilious.
20	14	—	46	—	6	Sanguine.
21	15	—	46	—	12	Bilious.
22	16	—	—	46	13	Bilious.
23	14	—	46	—	5	Bilious.
24	10¾	—	47	—	8	Nervous-sanguine.
25	18	—	47	—	3	Bilious.
26	17½	—	—	47	14	Bilious.
27	12	—	47	—	17	Bilious.
28	13	—	47	—	8	Lymphatic.
29	12	—	—	47	16	Bilious-lymphatic.
30	15	—	47	—	1	Lymp.-sanguine.
31	16¾	—	48	—	12	Bilious.
32	15	—	48	—	15	Bilious.
33	17	—	48	—	17	Sang.-lymp.Strum.
34	17	—	48	—	6	Sanguine.
35	16	—	48	—	10	Lymphatic.

Progressive No.	Age at the first menstrual crisis.		Age at the last menstrual crisis.		No. of pregnancies for each.	Temperament, or habit of body.
	Commenced favourably.	Commenced with difficulty	Ceased favourably.	Ceased with difficulty		
36	15	—	48½	—	9	Sanguine-bilious.
37	14	—	49	—	6	Bilious-sanguine.
38	12	—	49½	—	0	Bilious.
39	15	—	49	—	12	Bilious.
40	18	—	—	49	14	Bilious.
41	—	17	—	49	6	Lymphatic.
42	—	18	50	—	1	Nervous-sanguine.
43	14	—	50	—	10	Lymphatic.
44	19	—	50	—	12	Lymphatic.
45	19	—	50	—	8	Sanguine.
46	18	—	—	50	9	Bilious.
*47	13½	—	50	—	0	Lymp.-bilious.
48	—	14½	—	50	5	Sanguine
49	16	—	50	—	10	Lymphatic.
50	12	—	—	50	7	Sanguine.
51	—	16	50	—	12	Nervous-bilious.
52	16	—	50	—	11	Lymp.-sanguine.
53	16	—	50	—	9	Bilious-sanguine.
54	14	—	—	51	8	Bilious. Strumous.
55	13	—	51	—	9	Bilious-lymphatic.
56	12½	—	—	51	16	Bilious.
57	—	17½	—	51	12	Lymp.-bilious.
58	—	14	—	51	5	Sang.-lymphatic.
59	16	—	—	51	15	Sanguine.
60	14	—	51	—	15	Bilious.
61	18	—	51¼	—	11	Bilious-sanguine.
62	17	—	52	—	9	Bilious.
63	—	18	52	—	12	Lymphatic.
64	14	—	—	52	13	Lymphatic.
65	—	17	—	52	8	Sanguine.
66	16	—	52½	—	11	Lymp.-sanguine.
67	16	—	—	53	7	Bilious.
68	10½	—	—	54	4	Lymp.-san. Strum.
69	20	—	—	66	13	Lymp.-sanguine.
Average age.	15·03	16·90	46·30	49·35	Average number of pregnancies.	
Total average.	15·33		47·32		7·56	

* Unmarried.

In reference to some of the points set forth in the foregoing table, it may be remarked in the first place, that the influence of hereditary peculiarity in determining the period and character of the principal constitutional changes at certain critical stages of life, — so far, at least, as can be shown by the very limited inquiry the results of which are now exposed, appears to develope itself as life advances; the mental disposition and the morbid susceptibilities becoming more closely approximated in their nature towards the close of life, among members of the same family, than they appeared to be in childhood and youth. Thus, the individuals represented by numbers 24 and 25, are mother and daughter, both in respectable circumstances. There was a difference in the age at which puberty was accomplished in each respectively, of seven years and a quarter; each bore a similar number of children, and both ceased to menstruate, equally favourably, at the age of forty-seven. Numbers 31, 32, and 38, are sisters, all married. The two first began to menstruate at 15 and $16\frac{3}{4}$ years of age, respectively, and ceased finally, without difficulty, at the age of forty-eight: each bore a large family; the last began to menstruate at twelve years of age, was never pregnant, and finally ceased at the age of forty-nine and a half. Numbers 37 and 42, are sisters; there was a difference between them of four years in their first menstrual changes, and of one only in their last: both are mothers of families. Numbers 46 and 47 are also sisters; there was a difference in their ages at the time of their first menstrual change of four years and a half; the first bore nine children, the second was never married: both ceased to menstruate at fifty.

In like manner certain forms of disease, occurring in different individuals of the same family, appear to become more nearly allied in their seat and character in late, than they were in early life. Of the mother and daughter, constituting

the first group noticed in the preceding paragraph, the first was afflicted with asthma, which always became particularly distressing during pregnancy, but without interfering injuriously with the process of gestation; her daughter was perfectly free from this complaint in the early and middle periods of life, but suffered constantly from hœmorrhoids: to the latter affection, and occasionally to asthma, both became equally liable after having ceased to bear children. The first of the third group suffered severely during each pregnancy from tic-douloureux and megrim; an ailment which her sister did not experience until after the child-bearing period, when both became similarly affected. The two indicated in the fourth group, consisting of an unmarried and a married sister, are members of a gouty and dyspeptic family. The first was a great sufferer during the middle part of life from painful digestion, headache, and hæmorrhoids; the other was comparatively free, during the corresponding age, from these complaints, except the last-mentioned, with which, together with other symptoms, she was troubled during each pregnancy. Both are now equally the subjects of rheumatism and indigestion.

It appears, moreover, that a greater liability to disease exists in those who have the change protracted beyond the average age of cessation, than in those instances wherein it happens at an earlier period: the number of unfavourable occurrences being, for the former, one in three; for the latter, one in every four individuals. The number of pregnancies for each respectively, is greater in the former than the latter; but the abortions fewer; and their age at puberty is about six months later, and on the average less favourably accomplished.

Diseases of the last Menstrual Crisis.

The female constitution manifests a susceptibility of morbid action at the crisis now under consideration, perhaps equal to,

if not greater in degree than that of puberty: it has always, indeed, been regarded as a period fraught with peculiar difficulty and danger. In the majority, the last menstrual change is accomplished with more or less inconvenience; in some with severe and prolonged suffering; and a fatal issue is by no means infrequent. All comprehended in the preceding table were considered to have completely surmounted the change at the time of the report; although one died a few months afterwards of uterine disease, the origin of which was clearly traceable to functional derangement, first manifesting itself at the time when the patient ceased finally to menstruate. Of the sixty-nine individuals of whose history an abstract is now given, twenty-three, or about thirty-three per cent. encountered difficulties in immediate connection with the changes then taking place, of such nature as to require active remedial assistance.

But even those denominated "favourable," among the preceding cases, were not all equally free from disease at the period in question. Several suffered, in greater or less degree, under an affection presently to be noticed, which, although of extremely common occurrence, and attended frequently with considerable constitutional disturbance, rarely excites the serious attention of either patient or practitioner; and it is, perhaps, more than all, on account of its frequency, and partly also from a feeling of delicacy on the part of the patient, that it is so seldom brought under treatment.

The forms of uterine disease commonly met with at the period of the last change of life, may, for practical convenience, be arranged under three heads, each distinguishable from the other by the character of the discharge with which, early or late, it is almost invariably accompanied; and also, by the kind and degree of suffering which it occasions in the organ immediately implicated, and the sympathetic disturbances simultaneously awakened in remote parts of the body.

The *first,* and most common of these affections, is characterized by a mueo-purulent discharge from the vagina, generally denominated *leuchorrhœa,* or the whites; but which differs from simple leucorrhœa in several important particulars; the *second,* is often accompanied by vaginal hœmorrhage, the discharge differing, both as to its properties and in its source, from the menstrual product; the *third* form, is characterized by a watery, sanious, serous, or ichorous discharge, which is sometimes mixed with blood, sometimes with pus, mucus, or albumen-like shreds, and occasionally with small portions of fleshy matter, the product of the organic change upon which it depends. It generally emits an offensive odour.

The preceding arrangement is not intended to include all the diseases, palpable and obscure, of which the uterine system is susceptible; but such only as are of daily occurrence, and which, implicating the lower extremity of the uterus or the vagina, are capable of being brought within the sphere of ocular investigation. Consequently, no allusion is made to disease of the *ovaria* and Fallopian tubes, nor to the various forms of polypous and fibrous growths, calcareous deposits, and other obscure affections occasionally met with; except when these happen to be associated with lesions of a more tangible description.

Further, it is not my purpose to do more in this place than incidentally allude to the pathology of leucorrhœa, as the subject will be brought more fully under consideration hereafter. As a general rule it may be observed, that any continuous discharge from the vagina, whether watery or mucous, whether white, purulent, or mixed with blood, is to be regarded as an evidence of disease. Yet these manifestations are extremely common in women of all ranks and conditions, and at every age, from that of puberty to the end of the longest life.

1. As was already noticed, *leucorrhœa* may prevail before

the first appearance of the menses; or it may supersede the normal menstrual secretion at a subsequent period, on occasion of its temporary arrest from accidental causes; in which form it must be looked upon, to a certain extent, as a salutary effort of nature to relieve the vascular system from a state of morbid repletion. On the other hand, it may exist while the menstrual function appears to be regularly and healthily discharged, in which case it usually occupies the entire interval between one monthly period and another; often inducing a degree of constitutional weakness under which the efficient performance of the vital functions can with difficulty be sustained. It is of much more frequent occurrence after marriage than it was previously, whether the individual have borne children or not; and a notable difference is observed in the attendant phenomena as manifested in the one state and the other.

An individual, who has been the subject of leucorrhœal discharges during the period of child-bearing, and in whom the affection remains uncured, is pre-eminently susceptible of disease at the crisis of cessation; the change in her is, generally speaking, earlier attempted, but occupies a much longer period, and is surmounted with greater difficulty than is encountered by others more favourably circumstanced in this respect. The last pregnancy in such a person is usually accomplished with great suffering, and not unfrequently has an abortive termination. During gestation, constant aching of the loins and abdomen is complained of, with lassitude, alternate rigors and flushes of heat, venous congestion, hœmorrhoids, irritable bladder, bearing down, and repeated threatenings of miscarriage. The more prominent symptoms are, tenderness and sense of unusual fulness of the hypogastrium; fixed pain in the right or left side of this region near the groin, corresponding to the situation of the round ligament and the nervous filaments — branches of the hypogastric plexus — which emerge with it from the abdominal

cavity, ramifying upon the parts adjacent to the point of its implantation; wandering pains about the iliae and inguinal regions and upper part of the thigh, in the eourse of the branches of the inguino-eutaneous and external pudie nerves; and leueorrhœal diseharge, which is sometimes more or less tinged with blood.

Under the conditions just enumerated, there exists great liability to *post-partum* hœmorrhage from uterine atony; or to total arrest, from the same eause, of both exeernent and contraetile aetion of the uterus, aeeompanied with an alarming and perilous state of physieal prostration, which not unfrequently proves fatal ere reaction ean be brought about. At other times the loehial discharge is abnormally abundant, and eontinued for several weeks or months. As this beeomes less in quantity, and paler, it is generally observed to be mixed with pus, which, in a short time, will be found to eonstitute its predominant principle. The seeretion of milk is seanty and innutritious; and recovery is protraeted, and for a long time ineomplete. When menstruation becomes reestablished, it is often irregular, both as to the quantity of the produet, and the times of its reeurrenee. More decided indieations of disordered digestion supervene, with swelling of the limbs and abdomen, asthmatie breathing, palpitation, profuse perspiration, and other symptoms eommonly resulting from general debility. Disorders, with whieh the individual was afflieted in youth, and which have been suspended during the middle stages of life, are liable to reappear at the period of the last menstrual erisis. This observation applies espeeially to diseases of the skin and the mueous tissues, and to the renewal of a tendeney to phthisis.

If the uterus of one thus affected be examined with the speculum, it will be found in most instanees—in all instanees, indeed, so far as I know—in a state of disease. The lesion usually consists in hypertrophy of the *cervix,* or of the whole organ, with an ulcerated state of one or both *labia.* The most

common form of ulceration is that of a simple granulating surface with a defined margin. Sometimes there is induration of the anterior *labium,* which, when considerably enlarged, projects downwards in a conical form, and is generally excoriated or superficially ulcerated, especially on its posterior surface; the abrasion extending in an upward direction towards the inner *cervix.* At other times both labia are indurated, with or without abrasion; and, accompanying this state of parts, there is often also an ulcerated fissure, more or less deep, occupying one or both *commissuræ labiorum.* Occasionally, the *labia* appear but little, or even not at all enlarged, or in any way diseased, but the margin of the *os* presents a ring of intense redness. This is the sure indication of inflammation of the lining membrane of the uterus, or *endo-uteritis;* and is accompanied with enlargement of, and pain upon pressure being applied to, the body of the organ. That these morbid conditions of the uterus constitute the principal cause of all the disturbances before enumerated, is sufficiently clear, from the circumstance of their being most signally, often instantaneously relieved, by the mere use of local remedies, even without the assistance of constitutional treatment.

Case XXII.

Purulent leuchorrhœa after cessation of the Menses; Disease of the lower part of the Uterus; Cure.

Mrs. C. S., fifty-five years of age, of the lymphatic temperament, native of South Cheshire, consulted me in August, 1844, for disordered digestion, "inward weakness," and the whites, under which symptoms she had for several years been a sufferer. It was stated that she had borne eleven children at the full term of utero-gestation, and subsequently, two abortions, each in the fourth month of the process, and for which no adequate cause could be assigned. Her last abortion, which occurred in her forty-seventh year, was attended,

at the time of delivery, by profuse uterine hœmorrhage, which was continued in a moderated degree six or seven days; when an offensive, ichorous discharge came on, in quantity nearly equalling what the *lochia* should be under favourable circumstances. Three weeks after delivery, the menses appeared, and were afterwards repeated at regular periods; the offensive secretion occupying the whole of each interval. In her forty-ninth year, the menses began to be irregular; sometimes continuing ten, twelve, or fourteen days, and sometimes being delayed seven or eight weeks; the light-coloured discharge, which at this time had assumed the appearance of common pus, devoid of fœtidity, occupying still the intermediate period. At fifty-two years of age, the menses finally ceased, but the leucorrhœal excretion continued undiminished, and for a length of time afterwards was observed to become periodically augmented, on which occasions it was usually attended with languor and febrile irritation, aching of the loins, distension of the abdomen, and aggravation of the dyspeptic symptoms, to which latter affection all her other sufferings were then, and always had been, attributed.

At the time of her application for treatment, her prevailing complaints were: lassitude, loss of appetite, pain of the stomach, and all the usual concomitants of aggravated dyspepsia; and a copious vaginal discharge of yellow matter, communicating deep stains to the linen which were difficult of removal by washing. Suspecting the existence of uterine disease, I explained my impressions in reference thereto, and suggested the desirableness of an examination, which was not then permitted. She was ordered, however, to use, night and morning, an injection of solution of sulphate of zinc, combined with wine of opium; to take a mild alterative and anodyne [1]

[1] ℞. Camphoræ, gr. v.
Pil. Hydrarg. gr. iv.
Pulv. Opii, gr. j.
Misce, fiant pl. iij. pro dosi.

dose at bed-time, and a draught of decoction of *cinchona* with extract of *taraxacum*, rendered slightly aperient by the addition of sulphate of magnesia,[1] twice daily. This treatment was persisted in about a fortnight, when she returned to the country, not perfectly well, but greatly improved.

In March, 1846, Mrs. C. S., again applied for relief, the vaginal discharge, with its attendant inconveniences, having returned; although her sufferings, on the whole, were less severe than they had been formerly. She also complained, at this period, of piles, an affection under which she had not previously laboured. Having, as she stated, more carefully attended to the invasion of the symptoms during this second accession, she strongly expressed her belief in the correctness of the opinion formerly given, in reference to the affection of the womb being the principal seat of mischief, and not the digestive organs as was before alleged: the leucorrhœa, with its attendant sympathetic manifestations, having existed several weeks before the stomach began materially to suffer. A specular examination being now made, the *cervix uteri* was found enlarged and unusually hard; the anterior *labium* and a small portion of the posterior, presented granulating surfaces, and a deep, ulcerated fissure occupied the right *commissura labiorum*. The whole was covered by a thick, yellowish secretion of purulent appearance, exhibiting alkalescent properties; and a sanious discharge exuded from the orifice.

The treatment consisted in the administration of similar medicines to those employed on the previous occasion, with addition of the application of nitrate of silver to the ulcerated surfaces. This remedy, which was used in form of a *strong solution*,[2] was five times repeated, at intervals of five or six

[1] ℞. Decoct. Cinchon. ʒiss.
Extract. Taraxaci, gr. xv.
Magn. Sulph. ʒj.
Misce, fiat haustus.

[2] ℞. Argenti Nitratis, ʒj.
Aquæ Distillatæ, ʒiij.
Misce, fiat solutio.

days, when the discharge ceased, and the parts were quite healed. A slight degree of ptyalism was manifest on the twelfth day of the treatment, on which account the pills were discontinued. She returned to the country, apparently well, at the end of five weeks; but was recommended to continue taking the draught some time longer, and to use, occasionally, the injection of *Liquor plumbi* combined with an opiate.

Endo-uteritis is an extremely troublesome and enduring complaint, occurring in women at any period of life after puberty, and being attended with considerable suffering and inconvenience, derangement of function, and often with danger to life. It consists in inflammation of the lining membrane of the *uterus,* of which sometimes a portion only, but more frequently the entire surface, is implicated. It almost always extends throughout the *cervix* to its lower aperture; occasionally it is continued along the Fallopian canals to their outer extremities, and thus, in some instances probably, it may be a cause of disease, of a still less manageable character, affecting these and the neighbouring appendages. In the acute form, in its first stage, a quantity of glairy or ropy mucus is generally thrown off, which, after a short continuance, is succeeded by a sanious or purulent fluid of darker hue. There exists, at this stage of the complaint, a peculiar disposition to exudation of plastic lymph, which, under some circumstances, becomes organized; being exfoliated and expelled in a membranous form, accompanied by violent bearing down pains like those of labour. This substance, which constitutes the dysmenorrhœal membrane already noticed as a condition connected with disordered menstruation, is most frequently observed in women before the commencement of child-bearing; but it also happens under other circumstances. The manner in which it interferes with the process of utero-gestation, will be alluded to in the chapter on that subject.

When inflammation of the internal uterine membrane

occurs late in life, it is more commonly of a chronic than of an acute character. It appeared, however, in the latter form, as one of the conditions connected with Case XXIV. The discharge is purulent, or sanio-purulent; occasionally it is ichorous and slightly offensive. In some cases, it exists several years before the cessation of the menses. It may owe its origin to circumstances attendant upon the last pregnancy, especially if this happen to have terminated prematurely, or if the labour have been difficult, or the recovery protracted. It very frequently has its origin in gonorrhœal contamination.

The body of the uterus in cases of *endo-uteritis* is somewhat enlarged, and painful under pressure of the finger; the *cervix* is slightly hypertrophied, but not so painful as the upper part of the organ, and it is generally free from abrasion. The only evidence of the existence of the disease, capable of being revealed by the speculum, is the presence of the bright red ring surrounding the verge of the *os uteri,* together with the escape therefrom of the characteristic fluid product; or of a small quantity of blood, which, by becoming incorporated with the vaginal mucus in its transit outwards, appears at the *os externum* in the form of *sanies.*

The symptoms of this disease are: rigors and febrile excitation, which varies in intensity according to the severity of the local inflammation, or the peculiar constitutional susceptibility of the individual; lassitude; sense of fulness, weight, and tenderness of the hypogastrium; fixed pain in the inguinal region, occupying one or both sides; disordered digestion; irritable bladder; spinal irritation, and convulsive affections.

The treatment consists in the application of leeches to the *hypogastrium,* or over the upper part of the *sacrum;* and in the exhibition of remedies similar to those employed in Case XXI. In addition, when all febrile excitement has become completely subdued, a more decidedly tonic plan will probably

be indicated; and considerable benefit may be derived from injecting within the *uterus,* a weak solution of nitrate of silver in combination with *extractum conii;* [1] or by the introduction of an ointment of the same material.[2] The latter form of the remedy is applied by means of a small piece of lint fixed upon the end of a long probe, and fastened to the handle of the instrument with a thread, with a view of securing its safe withdrawal. Not only does no disturbance or discomfort of any kind ensue upon the employment of these local measures; but, on the contrary, a beneficial change is often evident after the first application, and I have witnessed the suspension of pain to be instantaneous. The operation of injecting is done with the aid of the speculum, by means of a long syringe similar to Clarke's female syringe, having a nearly straight tube, with but one hole at its extremity. If carefully managed, from one to two drams of the remedy, (which may be composed of different materials, varied in form and strength according to circumstances) — will pass within the organ at each operation, most of which returns almost immediately. The temperature of the fluid, previous to being used, should be raised to about ninety degrees, Fahr.

2. Hœmorrhage from the *uterus* is not an uncommon occurrence in women who have ceased to menstruate. It is generally observed to take place in those of full habit of body, who have been subject to biliary derangement, asthma, piles, visceral obstructions, and other affections connected with a congested state of the portal circulation. Such individuals are liable, through the middle and earlier periods of life, to profuse menstrual discharges, vicarious *hæmatemesis, varicosis* of the lower limbs and about the pelvis during pregnancy, and to *post-partum* hœmorrhage.

[1] ℞. Argenti Nitratis, gr. vj.
Extracti Conii, ʒj.
Aquæ Destillatæ, ℥i.
Misce, fiat injectio.

[2] ℞. Argenti Nitratis, gr. x.
Unguenti Cetacei, ℥ss.
Liquoris Plumbi, ʒss.
Misce, fiat unguentum.

When hœmorrhoidal affections occur as a result of plethora of the portal system, independently of any of those mechanical impediments which frequently exist about the pelvis and lower bowels, a distended state of the uterine veins will also, for the most part, be found co-existent. This condition of parts is frequently relieved, however, by escape of blood from about the rectum, or, when occurring during the existence of the menstrual susceptibility, by a timely organic discharge through this channel; the affection, consequently, seldom proceeds, under such circumstances, to a pitch beyond that of mere congestion. But where the conditions favourable to this mode of relief do not exist, as after the cessation of the menses, or during pregnancy, the distended veins ramifying upon the lower and external parts of the uterus readily take on the ulcerative process and burst, an event almost always attended by loss of blood to greater or less extent, and followed by the formation of an open varicose ulcer of the part, which not unfrequently proves both lasting and troublesome. The hœmorrhage, which is sometimes alarmingly profuse, may cease after a few hours; but it often continues many days, or weeks, and sometimes several months. On subsiding, it is replaced by a light-coloured discharge, which is observed, occasionally, to be more or less mixed with blood, but consisting essentially of a combination of mucus and pus in variable proportions; the vaginal mucous membrane participating, in greater or less degree, in the generally increased action of the surrounding parts, thus furnishing its peculiar secretion in unusual abundance. The affection under this form, familiarly known as "the whites," may harass the patient for years, or, by gradually undermining the constitutional powers, may keep her in a state of suffering and misery to the end of life.

In some instances the congestion, which at the onset was confined to the lower part of the organ, does not terminate in varicose ulceration, but, becoming more generally diffused, assumes the form of uterine phlebitis, accompanied with

abdominal enlargement, and alarming constitutional disturbanee. Inflammation of the peritoneum is often a eonsequenee of the further extension of this state of the affeetion, with effusion into the peritoneal eavity, eonstituting a eommon form of abdominal dropsy. The following eases will serve to illustrate the varity of uterine disease now deseribed.

Case XXIII.

Uterine Hœmorrhage after the Cessation of the Menses; Purulent Leucorrhœa; Varicose Ulcer of the posterior Labium Uteri; Cure.

A poor woman, named Ann Carr, fifty years of age, of the bilious temperament, was admitted a patient of the Lying-in Hospital, on the 10th of April, 1846, for the treatment of leueorrhœa, an affeetion under whieh she had for several years been a sufferer. She stated that she had had fourteen pregnaneies, the first six and the fourteenth of whieh terminated favourably at the full term of utero-gestation; the seven intermediate pregnaneies were abortions, — four of whieh happened in the sixth or seventh month of the term, and were still-births; and three before the end of the fourth month. When near the eompletion of her sixth pregnancy, she eontraeted a gonorrhœa from her husband, of whieh she thinks she was never properly eured: to the effeets of this she attributes her subsequent misearriages. The offspring of this pregnaney had purulent *ophthalmia,* and died emaeiated. She was somewhat improved in health at the time of her last pregnaney; but that ehild was puny, and died in infaney. After her last nursing period, in her forty-seeond year, she menstruated regularly until the age of forty-eight, when the menses finally ceased; but the whites, whieh had existed ever since the first appearanee of the diseharge in the form of gonorrhœa, beeame at this period still more abundant.

Five months after the above event, the patient being in very infirm health, with abdominal enlargement, creating a belief in

the existenee of dropsy, a profuse uterine hœmorrhage eame on, whieh passed away in clots of small size. This eontinued in a moderated degree, without eeasing, more than four months, when it was replaced by the leucorrhœal discharge, in its aeeustomed form. Her linen whieh she exhibited, was covered with thiek, yellow stains, and the recent seeretion was strongly alkaleseent. She complained of a fixed, deep-seated pain of the right hypogastrium, near the groin; severe and eonstant aehing of the right hip and thigh, and across the saerum; frequent desire to void the urine, with sense of eonstriction in the region of the bladder; disordered digestion, and irregular bowels; attacks of alternate ehills and flushes of heat; and great physical prostration.

Examined with the speeulum, the *cervix uteri* was found unusually tumid, and was traversed by a number of prominent venous branches of different sizes; the anterior *labium* was hard, hypertrophied, and exeoriated; the posterior *labium* was also enlarged, and completely occupied by a flabby, purple-looking sore with irregular surfaee, from whieh a small quantity of blood oozed out during the examination.

The treatment consisted in the applieation of leeches to the hypogastrium; and subsequently in the use of the solid nitrate of silver to the ulcer and to the whole of the lower part of the uterus. She also took, night and morning, a grain of calomel eombined with half a grain of opium, until the mouth beeame slightly affeeted; and a dose of the compound deeoetion of sarsaparilla eontaining three grains of iodide of potassium, thriee daily, for six weeks. The nitrate of silver applieation was four or five times repeated, at intervals of a week; and after relinquishing the sarsaparilla, she was ordered to take small doses of quinine and aloes, for several weeks more. The improvement progressed favourably from the first. She was diseharged cured, on the 15th of July, three months after her admission; but appeared sufficiently recovered several weeks earlier.

Case XXIV.

Uterine Phlebitis; Peritonitis; Effusion within the Peritoneal Cavity: Result fatal.

Elizabeth Dale, an emaciated woman of the bilious temperament and dry habit of body, became a patient of the Lying-in Hospital, in September, 1845, at the age of forty-six years and a quarter, and being in the seventh month of her sixteenth pregnancy. Her fifteenth pregnancy terminated in the birth of a dead child, at the end of the eighth month of utero-gestation; her fourteenth was an abortion at the end of the fourth month, and happened at the age of forty-three years and a half, since which event she has had no vaginal discharge whatever, either lochial, menstrual, or leucorrhœal; but has all the time suffered from distension and tenderness of the abdomen, disordered digestion, constipated bowels, bilious vomiting, and piles.

At the time of her admission, she complained of constant aching of the loins and hypogastrium; severe intermittent pains, attended with bearing-down efforts similar to those of labour, which she was apprehensive would soon take place; scantiness of urine, which was high-coloured, and voided with pain; lassitude; rigors, and fever. She had white tongue, dryness of the fauces, and thirst; her pulse was ninety in the minute. The fœtal movements were vigorous; the placental *soufle* being particularly distinct, and the double *battement* strong, and numbering one hundred and forty-six beats in the minute.

To the touch, the vagina was remarkably hot and void of mucus, the lower part of the uterus tumid and much more resisting than it usually is in the seventh month of pregnancy. Examined with the speculum, the *cervix* and *labia uteri* were found of a dark brick-red colour, becoming more of a purple hue, and being visibly congested, near the orifice. The whole

presented an erysipelatous appearance, but there was no abrasion of surface.

The treatment at this period consisted in the application of leeches to the hypogastrium; the administration of an anodyne and alterative medicine, in form of pills, at night, and of a mild saline aperient at intervals. She was delivered of a living child, at the full term of utero-gestation, on the 12th of December following. The labour was not more than ordinarily difficult. The placenta, which was expelled in about fifteen minutes after the child, was studded with nodules of fibrinous coagula of different sizes; its decidual reflection was thickened and abnormally opaque. There was no lochial evacuation, and the supply of milk was scanty.

Her recovery was tedious and unsatisfactory; the abdomen remained too full, and was always tender. A month after delivery, the breasts collapsed and ceased to secrete milk, and at the same time an ichorous, and slightly offensive discharge from the vagina was noticed, attended by deep-seated aching behind the *pubis*, and swelling of the whole abdomen. The lower part of the *uterus*, on being viewed with the *speculum*, was greatly hypertrophied, and presented the same dark-red appearance as before mentioned; but there was no breach of surface. The inner margin of the *os*, however, presented the bright-red ring indicative of inflammatory action, and there is little doubt that this state existed more deeply within the organ. A small quantity of a sero-sanguinolent fluid escaped from the uterus into the instrument, and a string of a brownish, glairy mucus seemed at the same time to be passing away: this was too adhesive to be removed by the lint used for clearing the surfaces. Twelve leeches were applied to the hypogastrium; a saline aperient draught was ordered to be taken at short intervals; and one grain of calomel combined with half a grain of opium every eight hours until its effects should become apparent in the mouth. The leeching, to a less extent, was twice afterwards repeated, at intervals of four or five days.

The sufferings of the patient were greatly relieved by the measures adopted; but the abdomen continued to enlarge, and the presence of fluid was soon manifest. Ten days after the first bleeding, an attack of violent pain of the loins and hypogastrium, of an intermittent character, came on, accompanied with bearing-down efforts, which continued to be repeated at short intervals until a substance was expelled from the vagina, when they ceased. This substance was found, on examination, to be a thick, fleshy, semi-transparent, membranous bag, having the precise form of the uterine cavity, and being in every respect similar to the *dysmenorrhœal membrane*. The patient appeared to improve rapidly after this event, and was considered convalescent at the end of a month.

Various remedies were subsequently employed with a view to effect the absorption of the effused fluid; but all to no purpose. The abdomen continued slowly to enlarge; and the health, after a time, began again to decline. On the 16th of July following, twenty-two pints of a clear, mucilaginous fluid, were drawn off by tapping. This fluid had a specific gravity of 1016, and 960 grains of it yielded 93 grains of solid albumen. The operation was again, and a third time repeated; and she died on the 6th of November, 1846, the abdomen being distended with a fourth accumulation of fluid.

On inspection of the body thirty hours after death, the *uterus* was found to be at least twice the size of the healthy unimpregnated organ. Its walls were thickened and spongy, and presented in the divided parts, innumerable minute openings, and those of several larger sinuses with angular orifices, out of which flowed a thickish, light-coloured matter, like pus. The cavity of the cervix was of a deep purple colour, caused by a mesh of small veins which contained dark-coloured blood. The peritoneum covering the fundus and body of the uterus, and that lining the pelvic cavity and extending upon

the abdominal parietes in an upward direction, to the root of the mesentery and meso-colon, and upon the right kidney, was dense and perfectly opaque; but exhibited no points indicative of recent inflammatory action. The *omentum* was shrivelled to a flattened band, extending between the transverse colon where its breadth was about two inches in extent, to the fundus of the uterus, to which it was firmly adherent by a narrower portion; and so completely was it incorporated with the *peritoneum* at this point, that no distinction was discoverable between the two structures. The right kidney was enlarged and softened, and presented the appearance of incipient granular change.

The preceding case is introduced in this place because it exhibits the essential conditions under which accidental uterine hœmorrhage usually takes place; and there is little doubt that a timely evacuation of this kind, in the absence of suitable remedial measures, would have proved the means of materially limiting the extent of the mischief. It is highly probable that, had scarification of the cervix, or bleeding with leeches from the same part, been practised in the first instance, more permanent good might have been effected. I am led to this belief in consequence of results since obtained by this practice in similar cases; and I now confidently recommend its adoption whenever fairly indicated, whether pregnancy exists or not. The procedure was not adopted in this instance from a groundless dread of interfering injuriously with the process of utero-gestation; but even at this risk it should not be neglected, so long as a reasonable prospect is opened thereby of securing the mother from danger. We shall, at all events, be justified in selecting, where optional or practicable, the least disastrous of two impending evils.

3. Fœtid discharges from the vagina, when not occasioned by the process of decay which retained portions of the *placenta*, or of the membranes of the *ovum*, are wont to undergo,

are justly regarded as indicative of serious organic mischief. When they occur for the first time at a late period of life, especially if the menstrual function have ceased completely to be performed, the existence of malignant degeneration may, for the most part, be confidently inferred. It must be borne in mind, however, that other conditions, of comparatively trifling importance in themselves, are sometimes attended with an offensive state of the secretions; but this circumstance cannot possibly mislead the practitioner, or in any way influence his judgment, as no one of ordinary information would venture an opinion upon the nature of a case of this description, or adopt a decided course of treatment, upon the evidence of the discharge merely, and without submitting the case to a full and satisfactory investigation.

Diseases of the uterus, accompanied with fœtid discharges, present themselves under a variety of forms, the particulars of which it is not my intention, in this place, either to describe or enumerate. Those of a malignant character are, generally speaking, preceded and attended by a similar train of symptoms, both constitutional and local, in each case; varying of course, from time to time, according to the nature of the structure implicated, and the extent and severity of the local affection. A notable preliminary condition is a plethoric state of the portal system of vessels, with occasional functional impediment of the organs in immediate relation therewith, and especially with symptoms denoting determination towards the region of the uterus. The final catamenial change is remarkable for profuse menstrual and leucorrhœal discharges, the latter usually persisting after the former has ceased to appear. Hœmorrhoids are a common affection under this state of the system; disordered digestion; pain of the head, especially at its summit and back part; erysipelas of the face; anasarca; disordered state of the urinary organs; and sometimes partial paralysis. The following case of malignant disease of the *uterus* and its appendages, commencing

in the form of cauliflower cancer of the *cervix,* (published in the Reports of the Manchester Pathological Society,) may be given as a type of this class of affections.

Case XXV.

Disease of the cervix uteri of the cauliflower variety; Cerebriform cancer of ovarium; Malignant degeneration of Fallopian tube and of cellular structure of the pelvis.

The subject of this case was a lady in respectable circumstances, of the sanguine-bilious temperament, who had enjoyed a tolerably comfortable state of health until within a year of her death, which occurred in October, 1846, at fifty-six years of age. Her seventh and last child was born at the age of thirty-three, when she became a widow. She ceased to menstruate at the age of forty-seven, without marked inconvenience; excepting a slight leucorrhœal discharge which had occasionally appeared during the preceding twelve months, having commenced at a time when the menses began to be irregular, and gradually increased in quantity as the latter waned.

After the final cessation of the menses, the leucorrhœa was repeated, or augmented, periodically, at times corresponding to the natural monthly periods; but after some months it became irregular, both in the times of its recurrence and the quantity and appearance of the secretion. In her forty-ninth year she had repeated attacks of bleeding piles, during the existence of which the vaginal discharge ceased, or was greatly diminished, but reappeared in its usual form as the bleeding from the hœmorrhoidal vessels subsided. From this period she continued to have, at irregular intervals of one to three months, alternate rectal and vaginal discharges, attended with a sense of weight at the lower part of the abdomen, and with lumbar and hypogastric pains, until the end of her fifty-fifth year, when symptoms of the specific affection set in, and the hœmorrhoidal affection did not afterwards appear.

Decided indications of the malignant change were first noticed eleven months before death. The patient, having for several days experienced an unusual degree of languor, and a sense of fulness and oppression of the abdomen, was seized with uterine hœmorrhage whilst walking in the street. She was not alarmed, however, by this event, believing it in reality to be a return of menstruation, a circumstance which she had heard was not uncommonly witnessed late in life. The bleeding was suffered to continue nine weeks without the adoption of any effective measures for its relief; and it was several weeks more before the patient would consent to the necessary vaginal investigation. At this period, the discharge which, for several weeks previously had greatly increased in quantity, and had undergone a notable change in its appearance, was so considerable as to require five or six changes of linen during twenty-four hours: it was a lightish brown, watery fluid, and peculiarly offensive. The functions of the bladder and rectum were also materially interfered with.

Upon tactile examination, the pelvis was found occupied by a tumor of irregularly spherical form, with lobulated surface, of the consistence of soft cartilage, and elastic. It was firmly impacted in the pelvis, occupying the whole cavity; but by persevering efforts the finger could be insinuated between it and the *vagina* so as to reach the *cervix uteri*, which was slightly thickened, but its surface was smooth and even. The tumor was insensible to pressure, but the vaginal membrane was highly injected and irritable.

By the aid of the *speculum*, the diseased mass, its surface being cleared of secreted fluid, appeared of an uniformly reddish grey, or salmon colour. Its structure was extremely brittle, small portions, the size of a pea or bean, being occasionally detached during examination. These fragments were semi-transparent, of a light ash colour, and were soon reduced by pressure between the finger and thumb, into a thin, glairy pulp.

The treatment, which was commenced seven months before death, consisted in the employment of mild tonic and alterative medicines: due attention being always directed to the condition of the urinary and alvine functions. The local applications were the solid Nitrate of Silver freely repeated every six or seven days, with injections of cloloride of lime, and of warm water, in the intervals. The solution of Nitrate of Mercury in strong Nitric Acid, was also several times tried; but the former remedy appeared to be decidedly preferable. After five or six applications, the symptoms were greatly relieved; the discharge was remarkably diminished, the tumor decreased in size, so as no longer to interfere with the action of the bladder or of the rectum; the hypogastric fulness and aching of the loins and hips were much less distressing, and the general health was decidedly improved; so that at the end of three months, very confident hopes were entertained of a successful issue. In the fifth month of the treatment, the tumor became reduced to the size of a small orange, having an excavated centre, with elevated, irregular edges. The discharge was no longer watery or sanious, but thick, yellowish, and purulent, and furnished in very small quantity; still emitting, however, an offensive odour. At this stage of the complaint, the patient began to experience severe and constantly increasing pain of the sacrum, hip, crest of the ilium, anterior part of the thigh, with tumefaction of the abdomen, and an anasarcous state of the whole limb; all on the left side of the body. The cause of these phenomena, which became daily aggravated, was satisfactorily revealed by the *post-mortem* appearances, to be presently described.

The *speculum*, the employment of which was so strenuously objected to at the onset, became the medium of administering, in the most gratifying manner, to the patient's comfort during the latter months of her life. The sore, by its aid, being fully brought within view, the whole of the

accumulated, offensive secretion could be effectually removed, and the surface treated with a soothing anti-septic agent, which rendered her comparatively comfortable for a length of time afterwards. These applications, which were composed of chloride of lime combined with *opium*, sometimes with extract of *conium* or of *belladonna*, became necessary every second or third day. On two or three occasions, when the operation was too long delayed, she experienced an attack of shivering, with increased pain of the *sacrum* and *hypogastrium*, vomiting, headache, and hectic fever. Such accessions were frequently repeated during the last few weeks of her life, and were always found to be most severe when a portion of the ulcerated surface had become changed (which was several times observed,) into a black, powdery, melanotic matter of a putrid and extremely offensive odour. This deposition could always be completely removed by means of lint held between the blades of a sponge-holder; and it was, doubtless, owing to the timely removal of this putrid substance, and the application of powerful anti-septic remedies, that life was prolonged and rendered less painful: the melanotic change being thus prevented from implicating the deeper structures of the organ.

On inspection of the body twenty-four hours after death, the *fundus* and body of the *uterus* were found of the ordinary unimpregnated size, and apparently free from disease; the *cervix* was thickened; and the *labia* were large, and expanded, presenting an uneven, ulcerated surface of malignant appearance, studded, here and there, with nodules of the original formation in form of granulations of different sizes, the remains of the tumor first noticed. The sub-texture of the adjoining walls of the vagina was loaded with hard, granular fat, some portions of which had undergone the malignant degenerescence. The whole of this adipose tissue was very vascular, the arteries especially being large and distinct; their coats thickened, and of cartilaginous hardness.

The left *ovarium* was the size of a small walnut, very hard and lobulated; and from one of these lobules sprang out a tumor which had acquired the dimensions of a fœtal head of seven months' growth. This tumor, which had a thick shining coat, consisted of a fine granular matter, of the consistence and appearance of the white matter of brain. It had insinuated itself between the common iliac vessels which were embedded in its substance posteriorly, and the *psoæ* muscles which were stretched along its anterior and outer aspect, having the lumbar plexus and anterior crural nerves running upon their surface. It was traversed by a great number of vessels with thickened coats, of considerable size; and some apparently enlarged nervous filaments were also traceable upon it.

The corresponding Fallopian tube was enormously distended in its whole length, the diameter of its calibre being about three quarters of an inch. This very unusual product of disease, from the convoluted arrangement of the viscus, and the adhesion of its external sides to each other in places where they had fallen into contact, together with its morbid attachment to the adjacent surface of the ovarian tumor, gave it, at first sight, an appearance as if forming an integral part of this body; but the adhesions being broken down, and the convolutions of the tube unravelled, it could be elongated into a soft cylinder having the thickness of a man's thumb, and of a pearly whiteness. Its fimbriated extremity was soft and pulpy, and looked like the surface of a granulating ulcer. The two outer thirds of the tube were filled with a soft cerebriform cancerous deposit;[1] its inner third contained a fluid resembling pus, which gushed out upon an opening being

[1] There can be no doubt about the malignant nature of the disease in this case: the fact having been satisfactorily substantiated by the testimony of my friend Dr. Renaud, who submitted several portions of the morbid product to careful microscopical examination.

accidentally made through its parietes. A number of enlarged vessels and filaments of nerves were seen joining the tube near its fimbriated extremity.

Changes of a precisely similar character, in the incipient stage, were observed in the organs of the opposite side. The right *ovarium* had the dimensions of an ordinary-sized bean, and was very distinctly lobulated. One of its lobules, larger than the rest, was indurated; and to this the *corpus fimbriatum* of the corresponding Fallopian tube was morbidly adherent. The two outer thirds of the tube itself were dilated to at least ten times the ordinary dimensions; its walls were thickened and highly vascular.

There can be little doubt, upon carefully reviewing the history of the preceding case, that the disease had its origin in the lower part of the *uterus*, and that it was subsequently conveyed to the Fallopian tubes, and thence to the ovaries, which were the last to become affected. For, looking at the relative state of advancement of the morbid growth in the Fallopian tube and corresponding ovary on the right side where the change appears to be in the incipient stage, the disease bears evidence of having had an earlier date in the former than in the latter; and the same may reasonably be inferred in reference to the primary stages of the affection on the left side.

The *corroding ulcer* is said to attack the uterus at an advanced period of life, entailing disastrous consequences. Of the true form of this affection I have not met with an instance after the cessation of menstruation. I had an opportunity of witnessing what I considered to be corroding ulcer in the incipient stage, in January, 1846, in a woman thirty-four years of age, a few weeks after her fifth delivery. The patient, who had the scrofulous constitution strongly marked, was, not long since in very comfortable circumstances, and in the enjoyment of tolerable health; but a series of disastrous events,

coupled with distress of mind and severe temporal privations, had reduced her to a state of cachectic emaciation. For two or three months before confinement, she had experienced constant languor, sometimes to prostration; severe pain of the loins, tenderness of the abdomen, and frequent threatenings of premature labour; all indicating a deranged state of the uterine system. Her labour was not protracted, but was described as having been extremely painful. After the lochial discharge had ceased, it was succeeded by one of a purulent character, emitting a peculiarly sickly and offensive odour; and the aching of the loins, with oppression and tenderness of the abdomen, continued. On specular examination, the *cervix* and *labia uteri* were found greatly tumid and irritable, exhibiting, here and there, patches of excoriation. On the posterior *labium* were observed two deep, rounded fossæ, similar to what might be caused by displacement of enlarged Nabothean follicles, but widely different from ordinary follicular ulceration. Each was sufficiently large to admit a good-sized pea. An injection of *Liquor Plumbi* with *Vinum Opii*, tonic medicines, and a generous diet, were ordered. In consequence of some accidental circumstance, the patient was not again seen for nearly three weeks, when the ulcers were found to have coalesced, and to have become considerably larger. They formed, at this time, a deep excavation of an oblong shape, and sufficiently large to have held a body equal in size to that of a large bean. Its edges appeared somewhat hard, angry, and slightly overhanging the ulcer, which, after being freed of the secretion contained in it, exhibited a greyish-looking base, void of granulations. The solid nitrate of silver was freely applied to every part of the cavity, and the solution of the same material was painted over the adjoining surfaces. A dose of the *Decoct. Sarzæ Co.*, containing three grains of the *Iodide* of *Potassium* was given thrice daily, with a moderate allowance of port wine; and ten grains of the *Pulv.*

Doveri every night. On the seventh day the slough had separated, and a crop of red granulations covered the surface of the sore, which had already become shallower. The patient was restored to health in six or seven weeks.

Offensive discharges may exist under a variety of circumstances, unconnected with the forms of disease just noticed. For instance, the product of some forms of *endo-uteritis* — partly from being retained within the organ a length of time after its exudation, and partly, perhaps, from being imperfectly incorporated with the mucus of the vagina, through which passage, when of a sanious character, it escapes without detention — is generally more or less fœtid. The secretion from the surface of an indolent ulcer of the *cervix*, being retained, becomes fœtid. Warty growths upon the vaginal membrane or lower part of the uterus, furnish an ichorous discharge which is both offensive and acrid, excoriating the external parts over which it passes. Some women have the ordinary menstrual product fœtid. This happens when the blood is retained within the uterus unusually long after its escape from the vessels, in which case it is sometimes expelled in a grumous state, or in form of small clots, and with pain. And the mucus secreted from the vaginal membrane itself may become fœtid under some circumstances: for example, when the product is not sufficiently acid to resist the tendency to putrefaction — (the vaginal mucus does not contain compensating saline ingredients to the same amount as other mucous products do); or when it becomes for a time decidedly alkalescent.

It was before observed that healthy vaginal mucus contains a quantity of free acid similar in its properties to the acetic. This agent has the power of entering readily into combination with the protein compounds contained in the blood and the secretions, dissolving them in all proportions, and communicating to the product with which it is associated, strong

antiseptic properties. Moreover, it deprives the vaginal mucus of the viscidity which other mucus possesses, and thus renders it less liable to thicken and accumulate between the folds of the membrane; and it is to this agency likewise, that effused blood may be for a much longer period arrested in the vagina, than within the uterus, without undergoing the putrefactive change.

It is impossible to regard, without feelings of astonishment and admiration, the evidence of design in the adaptation of means to the fulfilment of a purpose, which is here so beautifully manifested; or to contemplate, unabased by the most humiliating conviction of human helplessness, the consequences which would ensue upon the mere temporary suspension of this, one of the least conspicuous of the laws by which function is regulated. If the power which presides over the elaboration of this antiseptic principle were for a time to be suspended, and the purposes which it serves remain unsupplied; the secretion would be constantly liable to thicken, accumulate, and putrefy, giving origin to disturbances of the most unmanageable character.

CHAPTER V.

SIGNS OF PREGNANCY.

The period of utero-gestation in the human female comprehends the first nine months of animal existence; reckoning from the moment of impregnation, when the ovum — hitherto limited in its operations within a very narrow sphere — receives the fertilizing stimulus, to the completion of its intra-uterine growth. During this period the new creature is entirely dependent upon the maternal system; its organs being as yet imperfect, and unequal to the performance of the functions necessary to separate existence. This general law is not, however, without exceptions; and children born as early as the seventh month of uterine life, have been known to grow up strong and healthy, and live to an advanced age. But, for the most part, a life thus prematurely commenced is but of short duration; or, if continued, is but feebly maintained: the incomplete developement of the vital organs, and especially of the nervous centres, rendering them unfit for the efficient discharge of their respective offices, and a state of health is with difficulty established.

For the successful accomplishment of this process, it is essential that the maternal organs be in such a state of integrity as to be capable of performing their offices without impediment; of accommodating themselves with facility to the various progressive changes, and of supplying uninterruptedly the materials which the requirements of the new

creature constantly necessitate. Too frequently, however, the intentions of Nature are frustrated in this respect; various causes operating from without arrest her operations, and the ovum is destroyed and prematurely expelled, not unfrequently entailing the most disastrous consequences upon the parent.

Miscarriage, is the term usually employed to signify the expulsion of the fœtus from the womb at any period before the completion of its growth. When this takes place before the end of the sixth month, it is technically called *abortion*, the event being invariably attended with fatal results to the offspring; but after the sixth month of uterine life, the child is considered viable, or capable of sustaining life independently of its mother. Miscarriage, after this period, is known as *premature labour*. For the sake of convenience, I shall, in the following pages, use the word *abortion* in its widest signification, to denote the untimely arrest of the process of utero-gestation at any period of pregnancy before the fulfilment of the natural term.

Before entering upon the consideration of the various causes of abortion, it will be advisable, for obvious reasons, to examine briefly the changes which the organs more immediately implicated in the process undergo during pregnancy, and to point out the principal signs which indicate its existence. The importance of being able to distinguish correctly between pregnancy and disease is sufficiently evident. I know of no position less enviable than that of a medical man who, believing in the existence of ascites, ovarian tumour, or diseased uterus, pursues for several weeks, perhaps months, an energetic plan of treatment, in the midst of which the whole is suddenly terminated by the expulsion of a dead, half-matured fœtus, the palpable result of his own erroneous practices; or even by the birth, at its full term, of a living child, which will sometimes, in the most miraculous manner, struggle through a multitude of difficulties, even those of a

persevering medical officiousness which had nearly destroyed the mother.

The female system is susceptible of many morbid changes, the symptoms of which so nearly resemble those of pregnancy as to baffle the skill of the most experienced practitioner. An unfortunate case of this description, which lately occurred to an unmarried lady of rank and high official position will, doubtless, be fresh in the recollection of many readers. This lamented individual exhibited symptoms of deranged health, accompanied with enlargement of the abdomen. Ill-natured rumours affecting her reputation were soon afloat, and which, uncontradicted by authentic medical testimony, were not long in gaining currency with the public. After some months of acute suffering she died, the event, as was generally believed, having been materially hastened by severe mental anguish. A *post-mortem* inspection discovered the cause of death to have been extensive abdominal disease, unconnected, of course, with pregnancy.

A case of equal difficulty, although of an opposite nature, which occurred not long since in this neighbourhood, was related to me by one of the parties in attendance at the time. A lady who had borne several full-grown children, had suppression of the menses, followed by abdominal enlargement, and several of the other signs which usually attend the early months of pregnancy. At the time, however, when the phenomena of quickening were expected, no fœtal movements could be detected, and the enlargement was considerably greater than had been the case at a corresponding period in former pregnancies; the symptoms were consequently regarded as indicative of internal mischief. Her medical attendant, a gentleman of high standing in the profession, and of great practical experience, after due examination, pronounced her not pregnant, but dropsical. The abdomen continued to

enlarge from, as was then supposed, the accumulation of fluid, and the operation for its removal was determined upon, so soon as, for safety's sake, the usual term of pregnancy should have completely passed over. At a time appointed, the surgeon proceeded to the patient's house, provided with instruments requisite for the proceedure, when it was found that symptoms of labour had already commenced, and in due time the patient was delivered of a fine healthy fœtus at its full term. Her state had been obscured by an enormous collection of fluid both within the uterus and in the abdominal cavity, and also in the cellular tissue throughout the body, and of which it was said more than two gallons escaped during labour.

The following case is one of a still more serious nature, and will serve to show how difficult it is to detect the existence of pregnancy when complicated with disease, as well as the consequences which may ensue upon a mistake committed in diagnosis. A lady of my acquaintance, long subject to dropsical accumulation, was delivered ten months since of her second child, who is now living. [I date from the time when the particulars were recounted to me.] She is thirty-six years of age, and has been married eight years, during which time she has been only twice pregnant. Her first pregnancy was not attended by any unusual symptoms, except a dropsical state of the cellular membrane, which varied in degree at different periods, but was at no time very considerable. Her accouchement was of the ordinary kind, and she recovered favourably. In the early part of the year 18—, eighteen months after the above delivery, she began to be troubled with swelling of the lower extremities and abdomen, and was generally out of health. The swelling created no alarm, being an affection to which she had long been subject. It was accompanied by occasional sickness, capricious appetite, wheezing in the breathing, thirst, scantiness of urine, tenderness of the abdomen, and bearing-down. These symptoms

having existed for a length of time, and continuing to increase, she was induced to consult a medical gentleman, whom she afterwards saw in company of another, both of high standing in the profession. It was at this time six months since the invasion of the symptoms, and although she believed herself pregnant, no fœtal movement had been perceived. The menses had been arrested for two or three months at the commencement of the attack, but had since been repeated, although irregularly, and in small quantity. After a careful manipulation of the abdomen, and of the uterus *per vaginam*, the joint opinion was that the patient was dropsical, and not pregnant. A course of treatment was accordingly entered upon; the system was brought under the full influence of mercury: she was also recommended to continue the use of a pessary, which she had occasionally worn for the support of an alleged *prolapsus uteri*, for two or three years previously. Some weeks afterwards, having found no relief from the treatment adopted, she was removed to the sea-side. Nor was this step attended with the results which she had been led to expect. Her sufferings, indeed, became daily aggravated, and she was induced to consult a resident medical practitioner, who pronounced her, in accordance with the opinions previously given, dropsical, and not pregnant. Having been bled in accordance with certain directions, from a vein near the ankle, and taken medicines, she returned home at the end of a month no way improved, but with some of the symptoms decidedly worse.

One morning in December of the same year, and about nine months from the commencement of her complaint — for it must be understood that at this time she had altogether abandoned the idea of pregnancy, never having been able to detect any fœtal movement; and she continued to have scanty menstrual discharges, although at very irregular intervals — she was seized with severe pains of an intermitting character attacking the lower part of the abdomen and loins; and a

neighbouring practitioner, who had not before been consulted, was requested to attend. After a careful examination, manual and sthethoscopic, of the abdomen, it was again affirmed that pregnancy did not exist, but that all her troubles arose from accumulation of fluid within the abdominal cavity, and of which it was proposed to relieve her by tapping. As the patient had before undergone this operation for the relief of similar symptoms, she readily consented to its repetition. It should here be mentioned that the pessary, the use of which had been resumed as above noticed, was still in the vagina; this the attendant attempted, but failed, to remove, and was thus effectually prevented making an examination per vaginam.

Every preparation having been speedily arranged for the operation of tapping, a trocar was introduced through the parietes of the abdomen on the right side, and four or five pints of a yellowish fluid drawn off; after which, the pains being slightly relieved by this procedure, her medical attendant left her, promising to return in the course of the day. The pains soon returned, however, in greater severity than before, assuming at the same time more decidedly the intermitting character. The attempts which had several times been made to remove the pessary were again renewed, the "bearing-down" character of the pains leading both the patient and her attendants to the belief that something was to escape that way. By perseverance, assisted by the natural expulsive efforts of the uterus, the instrument was at length extracted, and in two hours after the operation of tapping, a full-grown living child was expelled. The patient recovered favourably. There is no doubt that the uterus was pierced by the instrument used in the operation, and that the fluid drawn off was the liquor amnii, as no evacuation of the kind by the natural passages preceded or accompanied the expulsion of the fœtus.

Cases of the above description, grave though they appear, are far from being of rare occurrence. There are, perhaps, few

practitioners, of five years' experience, who have not met with similar difficulties. At the commencement of my career, I was requested to attend a lady in her second confinement, whom I first saw during an attack of influenza, at which time she stated herself to be in the sixth month of pregnancy. The abdomen was enlarged, the breasts had undergone the usual changes, and she affirmed that the fœtal movements had been distinctly felt for more than a month. She dated the commencement of pregnancy from the cessation of menstruation, which for nearly six months had been completely suppressed. I afterwards saw her occasionally during the three or four following months, never doubting that she was pregnant. At the end of this period, I was summoned in the middle of the night, by the lady's husband, who stated that, during the previous day, his wife had been troubled with slight labour pains, which, since going to bed, had become considerably aggravated; and the nurse, who had been several days in attendance, was of opinion that delivery would soon be accomplished. On examining during the prevalence of a pain, the womb was found high up in the vagina, its body considerably enlarged; but its neck was elongated and unoccupied. I suggested that she must be wrong in her reckoning, and that labour would probably not take place for some time. A soothing draught relieved the pains and procured a comfortable night's repose, and on the following day she was ordered a dose of aperient medicine. After this, there was no return of pain, and she was soon able to resume her ordinary exercises. My belief being that pregnancy was still some weeks short of its fulfilment, she went on a visit to a friend's house at a short distance from town, where, a few nights afterwards, she was suddenly seized with what were considered to be the pains of labour, and the services of a neighbouring practitioner were immediately had in request. After waiting several hours, during which time he made frequent

examinations while the pains were upon her, he declared that she was not pregnant. The sequel proved his judgment to be right. A course of mild alterative treatment was commenced, and the patient returned home in perfect health, her proportions bearing no very pleasing testimony to my own erroneous diagnosis.

The practitioner is frequently called upon to decide upon the existence or non-existence of pregnancy, in cases where its concealment is attempted with a view to escape the disgrace consequent upon a knowledge of guilty or unlawful intercourse, or with a premeditated intention of criminal practices. On the other hand, pregnancy may be feigned for the purpose of extorting money — a species of imposture frequently practised; to compel marriage; to deprive the lawful heir of his right of succession; and to obtain remission of sentence of death, or delay its execution.

With these preliminary remarks on the importance of diagnosis, I shall proceed to point out the principal signs by which the existence of pregnancy may be generally known, and to offer a few observations on the progressive changes observed in the lower part of the uterus during the process of utero-gestation, which have not hitherto been specially dwelt upon as signs of pregnancy.

The signs of pregnancy may be conveniently arranged under three heads: 1st, Organic changes; 2nd, Functional deviations; 3rd, Sensorial manifestations. In recognizing the true bearing of each class of symptoms arising from these several sources, and especially those manifested in parts distant from the organs of generation, and distinct from them in the nature of their functions, the reader should bear in mind the anatomical structure of the uterus and its appendages, and the physiological relation of these parts with the various organs that more especially participate in the physical changes which they undergo.

Structure of the Uterus.

The structure of the uterus consists of a fibrous tissue, apparently of a fleshy nature, the fibres being arranged in bundles, a few of which, in some places, run parallel for a short course. They are loosely packed together, leaving interstices between them through which the blood-vessels, absorbents, and nerves freely ramify, and from which, when divided, a small quantity of fluid may be seen oozing out. As pregnancy advances, these fibres become more and more distinct, and when the uterus has attained its full gravid size, their muscular character is sufficiently evident. They are most numerous about the fundus; and at this period, according to Madame Boivin, they may be distinguished into three sets or layers; the outer layer taking an oblique direction from above downwards; the next being longitudinal; and the inner having a transverse or circular arrangement, most clearly seen around the body of the organ below its *cornua*. A distinct concentrical group is also demonstrable at each *cornu*, having the Fallopian orifice for its centre; their outer fibres becoming blended with the last-named set. On the *cervix* they appear to have a spiral arrangement, becoming more horizontal towards the orifice, where they present somewhat the characters of a sphincter, very clearly defined under certain states of vascular engorgement, and especially during menstruation. The bundles of fibres constituting the proper tissue of the uterus, appear to be bound together by means of its vascular and nervous ramifications, there being an entire absence of cellular structure like that existing in other organs of the body; except in the substance of the *labia* and lower part of the external *cervix*, where a small quantity of areolar tissue is found, especially surrounding the small follicular bodies situated in this part of the organ.

The uterus is plentifully supplied with blood, its vessels

being peculiar in their capability of undergoing the extreme changes necessitated by the enlargement of the organ during pregnancy. Its absorbents are large and numerous. In the gravid uterus, the trunks of these vessels are sometimes seen, according to Cruikshank, of the size of a common writing quill, and so numerous, that when injected with mercury, the uterus appears one entire mass of absorbents. They are sometimes filled with a white fluid resembling milk, a circumstance which may have created the belief formerly entertained, that the milk was secreted in this organ, and carried by the absorbent vessels to the breasts.

The absorbents perform an important office in the function of regeneration, being constantly in operation upon the effete portions of the solid tissues, which are removed by them so soon as they are rendered no longer serviceable, to be replaced by others supplied through the arterial current, endowed with a renewed principle of vitality, and prepared to fulfil their requisite share of duty in the animal organization. It is more than probable, also, that this system of vessels performs another and very important office during the process of utero-gestation. The product of conception, after its descent into the cavity of the uterus, remains in a state of isolation, so to speak, for several weeks; yet its growth continues actively progressing, although the manner in which nutrition is supplied, during this period, has not hitherto received any very satisfactory explanation. It is, doubtless, by the endosmodic force of the absorbent vessels that the floating embryo, surrounded by its shaggy chorion, is first attached to the walls of the uterus at the particular crisis when the parts are fully prepared for its implantation, and the same power constitutes the principal agency by which the placenta is maintained *in situ* during the rest of the gestative period.

The supply of nerves to the *uterus* was believed, by the early anatomists, to be exceedingly limited; while some, from

having failed to demonstrate them, doubted even of their existence; although from the contractile power of the organ, and its high sensibility under some circumstances, their presence must have been at all times inferred. Dr. Wm. Hunter was the first to examine the nerves of the *uterus* with any degree of attention; and he suspected them to be enlarged during pregnancy in similar proportion with the vessels: his descriptions, although by no means minute or very accurate, were, until within the last few years, the best account that had been given of them. The subsequent researches of Tiedemann, Lobstein, Osiander, and other anatomists, have added but little to our stock of knowledge on this subject; — the latter, indeed, denies that the uterus possesses any nervous system at all.

It is now known, however, that the uterus is as abundantly supplied with nerves, as with blood-vessels: their origin, course, and arrangement, have been most satisfactorily demonstrated by Dr. Robert Lee, to whom the merit of the discovery is solely and justly due. Dr. L. describes the hypogastric ganglion, from which the principal nerves of the uterus proceed, as being formed on each side by the hypogastric nerve, coming from a plexus formed by the interlacement of numerous fibres which proceed from the sympathetic cord of each side; and situated on the body of the last lumbar vertebra, below the bifurcation of the *aorta*. From the hypogastric plexus formed by a mesh of fibres proceeding from the above source, and which is situated on the side of the body of the *uterus*, a principal cord, with other collateral branches, descends to the *cervix uteri*, where they form the hypogastric or utero-cervical ganglion on each side. From the same *plexus* also, three principal branches proceed in an upward direction, supplying the body and fundus of the uterus, the round ligament, Fallopian tube, and ovary; there inosculating with filaments of the spermatic plexus. From

each side of the hypogastric *ganglion,* numerous filaments pass to the corresponding parts of the *uterus,* some backwards to the *rectum,* others downwards to supply the *vagina,* and a considerable number pass forwards to supply the bladder and ureters. Of the latter set, some take a course along the outside, others along the inside of each ureter, meeting in front of this tube, where they form the *middle* vesical ganglion. Two other *ganglia* are formed on the outer and inner sides of the ureter, which are called the *internal* and *external* vesical ganglia, of which the former is the most considerable. The hypogastric ganglion receives communicating branches from the third, and also from the second and first sacral nerves; and the filaments conducted along the round ligament establish important communications with other parts of the cerebro-spinal centre, through their inosculation with the external pudic and inguino-cutaneous branches of the lumbar plexus. A knowledge of these anatomical relations is of the highest value in enabling us to account for the numerous and distressing sympathies awakened during pregnancy, indicative of the various morbid conditions of the uterus to be described in a following chapter.

Peculiarities of the unimpregnated Uterus.

When unoccupied, healthy, and perfectly quiescent, the uterus of an adult woman measures about two inches and a half in length, from its lower orifice to the middle of its fundus, externally; nearly two inches in its greatest breadth between the Fallopian attachments on each side; and about an inch and a quarter in thickness, antero-posteriorly. It is of a compressed, pyriform shape, and moderately compact in structure. Its walls are of variable thickness, measuring, at their upper part, half an inch at the least; but gradually diminishing in a direction towards the lower orifice. Its cavity is triangular in form, small in dimensions — the anterior and

posterior walls being in contact, or nearly so; it is smooth, and contains nothing but a fine *halitus*, the product of its lining membrane; except at the *cervix* which, under certain circumstances, is occupied by a small quantity of glairy mucus, the peculiar secretion of this part of the organ. There are sometimes found, at the upper part of the cervical division of the uterine cavity, one or more small, semi-transparent, vesicular bodies, which Naboth called *ovula;* they are usually half embedded in the substance of the part, from which they may be removed by gentle force, having but a very feebly organized connection with it. The lining membrane of the cervix is corrugated into folds, which have an oblique or spiral arrangement, taking a direction from above downwards, backwards, and towards the left side. They occupy the sides and anterior walls of the tube; the posterior wall presenting a broadish *raphé*, which extends its whole length, and at the sides of which the spiral folds terminate. The raphé sometimes consists of two distinct parallel bands, joined together by short interrupted commissures, running transversely from one band to the other.

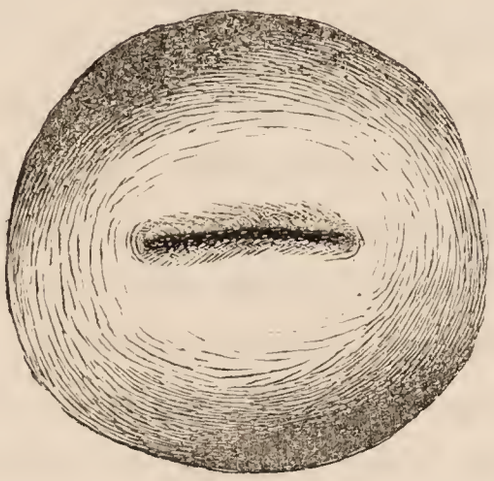
But the external neck, lips, and mouth of the uterus, being the only parts of this organ that can be brought under ocular examination during life, are therefore alone of any practical importance in pathological inquiries. These parts present the appearance of a compressed, mammillary projection, the size of a large nipple, thicker above than below; having a truncated extremity, with a transverse fissure, each end of which, in the virgin uterus, is turned slightly backwards; very closely resembling, in fact, the aperture from which it derives its name of *os tincæ*. This fissure is bounded behind and before by the *labia*, of which the anterior is considerably thicker and more rounded than the posterior: their opposing surfaces are maintained in close contact. The whole surface is smooth, even, and of moderate firmness. When

viewed by the aid of a medium-sized speculum, within the orifice of which the parts, in this state, are freely admissible, they appear of a reddish-grey colour; excepting the margin of the orifice, which, the instrument being pressed gently upwards so as to separate the labia slightly, exhibits the commencement of the inner cervix, which has a pinkish or salmon hue. The accompanying sketch represents the *post-mortem* appearance of the *os tincæ* in a virgin seventeen years of age:—



In one who has borne children the parts are strikingly altered. The *os* becomes permanently elongated and loses the slight bend at each of its extremities which gives it the tincæform character; the *labia* are thickened and more nearly of equal size, the commissures less clearly defined, and the whole cervix is enlarged and not so compact in texture. During the flow of the menses their shape is somewhat altered in either case. A few hours, or a day or two, before the discharge commences, the cervix becomes suffused, turgid, and softened, and the labia appear to be less firmly in opposition. The latter, in some instances, are observed to be so much enlarged during menstruation as to appear club-shaped, the circumference at the most dependent part of the organ exceeding that of the cervix immediately above. At other times the surface of the labia becomes flattened and presents a distinct fibrous appearance, the fibres having a concentric arrangement; and the follicles, which are ordinarily invisible, are at these times readily detected. The colour of the parts is also decidedly deeper. In a day or two after the

complete eessation of the diseharge, the parts again subside into their ordinary state, in which they eommonly remain until the following period. The subjoined figure represents the lower aspect of the uterus of a woman thirty-six years of age, a mother of ehildren, as it appeared when in a state of catamenial turgeseenee about three or four hours before the diseharge appeared: —



The charaeteristie feature of a healthy unimpregnated uterus, as distinet from that whieh indieates the existenee of pregnaney, is the *linear form of the orifice;* the labia being in apposition, and their margins smooth, even, and unindentated.

The organs of generation, and to a eertain extent the whole system, during the period of menstruation, are thrown into a state of high vascular and nervous excitement, which, in some constitutions, even where the funetion is eonsidered to be healthily performed, arrives at a degree bordering upon disease; in all instanees the suseeptibility to morbid aetion is greatly exalted at this critical period. Such a eondition would seem to indicate the necessity of carefully guarding against whatever may have a tendency to aggravate this state of the system; and in the employment of remedies, and especially in the regulations respeeting diet and regimen generally, this point should never be lost sight of. On the same grounds, sexual intercourse ought, aecording to some authors, to be

strictly avoided, having been occasionally followed by immediate and total suppression of the discharge, or by profuse hœmorrhage; to which have succeeded fever, delirium, convulsions, aud hysterical disturbances.[1]

On the other hand it has been matter of serious discussion among recent writers upon this subject, as to whether the menstrual period be not the most suitable and favourable juncture for the successful congress of the sexes; and its adoption has even been recommended as a cure for sterility. This opinion, suggested by the analogy known to subsist between the state of the generative organs of some animals during the rutting season, and that accompanying menstruation in the human female; and also between the appearances presented during the menstrual period, and that which the same organs exhibit a few days after conception, is by no means unreasonable, physiologically considered; however repulsive the idea may seem in a moral point of view. The similarity is certainly no less striking than real. On *post-mortem* examination of persons who have died while the menses were flowing, the uterine walls were found thickened and spongy, and the mucous lining was more or less turgid and suffused. The cervix and labia were tumid, the orifice patulent, and the vaginal membrane and clitoris were involved in the increased action. One of the ovaries was found larger and more congested than ordinary, presenting evidences of the recent escape of an ovum.

During the venereal orgasm also, especially when impregnation has been effected, and even when this has occurred at the remotest point of time from the menstrual period, the whole of the parts have been found in a state precisely similar to that above described. It appears, moreover, from the recent observations of Raciborski, that the period when conception does most frequently take place, and consequently when the organs appear to be in the most favourable condition for it, is

[1] See Cycloped. of Pract. Med.; art. Menstruation.

either a few days previous to the commencement, or immediately after the cessation of the menses: — the nearer the crisis, the more lively the aptitude. I believe that the danger from copulation during the period of menstruation to be in great measure assumed and fanciful, or at all events to be far less imminent than has been represented. This statement is founded upon no small number of inquiries.

Organic changes after Conception. Size and form of the Uterus.

When the sexual congress has been successful, the altered state of the organs, as above described, is persistent, and the uterus soon manifests those preparatory changes which are necessary for the reception and accommodation of the impregnated ovum. The womb, from this time, begins to enlarge, first in its parietal dimensions; afterwards its cavity is dilated. This change — the parts being in a healthy condition — is regular and uniform, slow until the fourth month, but much more rapid during the remainder of the process, as is shown by its relative dimensions at different periods, compared with those of its unoccupied state. When healthy and unimpregnated, the womb, as was already stated, measures two inches and a half in its greatest length, from the middle of its fundus to the *os tincæ;* at the time of quickening, this measurement will be found to have increased to six inches; while at the end of the ninth month, its measurement between the same points, is twelve inches, and all its other dimensions are increased in like proportion.

The uterus is naturally oval or pear-shaped, having its large extremity directed upwards towards the abdomen, where it is suspended by the duplicatures of peritoneum called the broad ligaments; and its apex downwards, resting upon the rectum, or floating between this organ and the posterior aspect of the bladder. This pyriform shape is preserved in varying degrees through the earlier months of pregnancy;

but toward the latter stages of the process, the cervix becomes merged in the general cavity, and the whole assumes a nearly globular form.

Position of the Uterus. Quickening.

About the third or fourth week of pregnancy, the lower part of the uterus will be found to have descended in the pelvis, resting on the rectum in the hollow of the sacrum. Increase in the weight of the organ has been assigned as a cause of this phenomenon. There is no doubt, however, that the real cause is increase in volume of the body and fundus uteri, which, restrained by the broad ligaments, as yet unyielding, from mounting freely upwards, projects its lower part in the direction of the vagina; so that at this period the uterus will be found, from having increased in this direction only, much nearer the *os externum* than when it was unoccupied. While in this position the *os tincæ* lies a little posterior to the axis of the pelvis, looking towards the hollow of the sacrum at about its third or fourth division; the *fundus* being thrown forwards by the sacral promontory. By the time the uterus has acquired a size sufficiently large to occupy the whole cavity of the pelvis, its pressure upon the viscera in immediate relation with it, is sometimes so considerable as materially to interfere with their functions. The rectum especially suffers from this cause; the descent of the fœces being mechanically hindered, and an accumulation sometimes taking place to an incredible amount. Retroversion of the uterus, which occurs while the organ is in this part of the pelvis, is invariably occasioned by such impediment, and frequently results in abortion. Affections of the bowels, simulating dysentery, irritation of the bladder and suppression of urine, nausea and vomiting, and a host of symptoms, are often owing to the same cause, and are entirely removed by timely attention to this circumstance. The developement and

altered relations of the uterus, during the early months of pregnancy, play an important part in the origin of some of the pathological changes resulting in abortion.

The uterus remains in the cavity of the pelvis until from the fourteenth to the eighteenth week after conception, its change of position depending upon the rapidity of its expansion and the relative size of the cavity which contains it. At this period it begins gradually to rise towards the abdomen. This change is accompanied by a train of symptoms affecting the patient both as to her feelings and appearance. In the space of from three to six days, the abdomen becomes considerably enlarged, owing to the presence of the uterine tumour in its cavity, which may be distinctly felt by the hand when placed immediately above the pubis. The movements of the fœtus in utero are now for the first time perceived by the patient, hence the origin of the term *quickening,* used to designate this phenomenon. The cavity which has hitherto contained the uterus, is but just large enough for its passive accommodation, and consequently allows no space for that undulatory motion which is observed during the after-period. The proper pelvic viscera moreover, do not possess a sufficient degree of peristaltic action materially to disturb its position while in this situation, nor do the parts contained within the pelvis enjoy a sufficient amount of sensibility to communicate impressions in a very lively or distinct form to the sensorium. These are cogent reasons why the movements of the fœtus are not felt before the ascent of the uterus out of the pelvis, although the process of developement must have been progressing as actively in the one situation as it afterwards does in the other.

Quickening not unfrequently takes place suddenly, occasioning a peculiar sensation at the lower part of the abdomen, accompanied by a degree of giddiness, or even syncope. It is more than probable that this arises from the sudden extrication

of the body of the uterus from the unyielding ring forming the upper boundary of the true pelvis, where it may for a time have been impacted, and have suffered a degree of compression from which, distension of the bladder or rectum, or some particular position or motion of the body, may have assisted in setting it free. The expressions commonly made use of by authors in explaining these changes would lead to the belief that the uterus, at this particular point of time, leaves the pelvic cavity altogether, becoming at the same time entirely lodged in the abdomen. "The child," says Burns, "is not felt to move till after the ascent of the uterus out of the pelvis." This, however, is an erroneous impression. So much of the body and cervix of the uterus as can be accommodated within the pelvis, remains in that cavity for a considerable time after quickening: it is only in the latter two months of pregnancy, when the cervix begins to form a share of the general uterine cavity, that the lower part of it mounts up towards the upper pelvic aperture. But even at the end of the ninth month the cervix of the uterus can be easily examined by the touch as well as by the speculum. For a length of time after quickening, the *os* and *cervix uteri* still reach to the hollow of the sacrum, there being but little difference in the position of the *os uteri* in the fourth month, when no movement whatever has been perceived, and in the sixth month after they have been sufficiently distinct during several weeks.

The uterine tumour is not unfrequently discovered to be situated more towards one side of the body than the other — sometimes on the left, but more commonly on the right side. This is manifestly owing to the existing state of the surrounding viscera. Accumulations of fœculent matter and of air which alternately occupy the sigmoid and ascending portions of the colon, often push the uterus in the one or the other direction; and this occurring when one portion happens to be collapsed, while the other is in a state of distension,

will cause a deviation in the one or the other direction. The position therefore, of the uterus in the abdominal cavity, may occasionally serve as a means of detecting certain abnormal conditions of the surrounding organs.

In the sixth month of utero-gestation the uterus will be found to have attained a considerable size, reaching as high as the umbilicus; and during this and the following months, its rapidity of growth is probably greater, in a given time, than at any other part of the process. At seven months it reaches half way between the *umbilicus* and *scrobiculus cordis*, and in the ninth month it occupies the whole abdominal cavity.

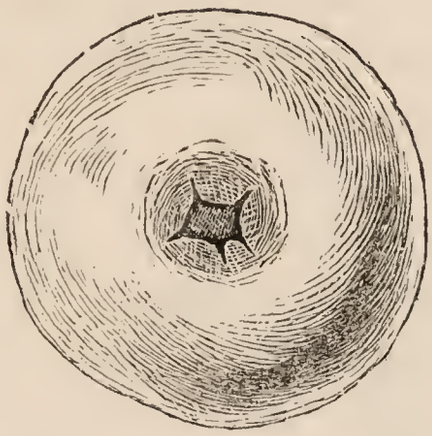
The parts in immediate relation with the uterus undergo considerable changes during pregnancy. The serous membrane covering a part of its upper and outer surface becomes soft and more distensible, and its mucous lining is also completely changed both in character and function. The texture of the uterus is altered in appearance. Its colour acquires a deeper hue, owing to the increased quantity of blood circulating through it; its walls are soft and spongy, and better adapted for undergoing the distension which they are intended to experience. Their thickness is at first increased; but so soon as the enlargement has proceeded to a certain extent, they become thinner, and by the end of the ninth month are so attenuated as to allow the touch readily to distinguish, through the walls of the abdomen, the different eminences and depressions which the surface of the fœtus presents while within the womb. In a case of extreme distortion of the pelvis, wherein I effected delivery by means of the Cæsarean Section, the anterior wall of the uterus, when divided, measured not more than a line in thickness. Immediately after making the incision, the divided edges retracted to a considerable extent, increasing at the same time in thickness; and after delivery had been effected, before closing the external wound,

the capacity of the uterus was reduced to about one-fourth or one-fifth its gravid size, and its walls were at least an inch in thickness.

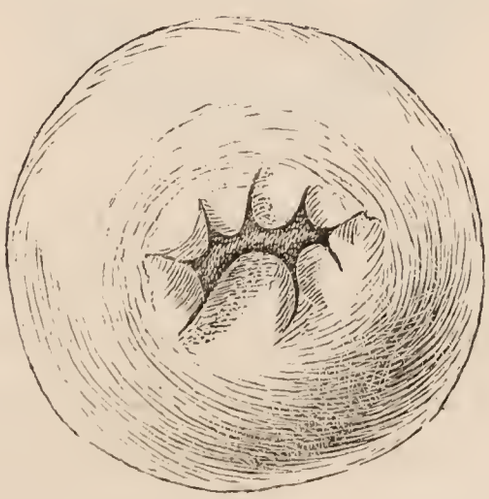
Appearance of the Os Uteri during Pregnancy.

The only test capable of revealing with certainty the existence of pregnancy during its early stages — from a few days after conception to the middle or end of the fourth month, when auscultation first becomes available — is that which the appearance of the os uteri presents to specular examination. It was before stated that, during menstruation, the labia uteri were in a state of high vascular turgescence, and the os tincæ, although elongated, and having its boundaries somewhat relaxed, was nevertheless closed and linear, except during the escape of the small menstrual clots before noticed. At the time of conception, the parts are thrown into a precisely similar condition; but no escape of fluid occurs to relieve the turgescence, which consequently continues to increase. In from ten to twenty days afterwards, the whole organ is found considerably enlarged, and the circulation through it augmented both in force and volume; the labia are thickened and apparently elongated, the commissures less distinct, and the *os* appears to be sunk in, or dimpled, owing to the distension and consequent projection of the labia below the level of the orifice. In the fourth week, the *labia* at the centre of their margins, are permanently separated to the extent of one or two lines; and the *os tincæ*, which was before a mere chink with parallel boundaries, is now seen to be an elliptical, or sometimes rounded aperture, which is occupied by a deposition of transparent, gelatinous mucus. At six or eight weeks it becomes decidedly oval, or irregularly circular, with a puckered or indented boundary, having a relaxed and lobulated character. This appearance is shown in the accompanying sketch representing the uterus of a woman, twenty-

three years of age, who was seven weeks advanced in her second pregnancy: —

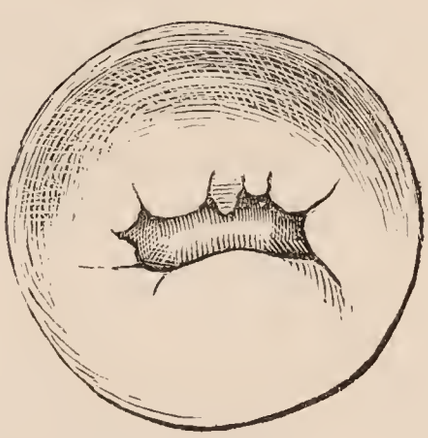


These changes of form of the lower uterine orifice are evidently owing to distension of the surrounding textures, caused by the increased flow of blood into their structure. The whole circumference of the cervix is enlarged in all its dimensions; the labia become less and less distinct by the simultaneous expansion of the commissures, so that at the stage above-mentioned the existence of the latter is altogether obliterated. After this period, the parts present a great variety of appearances, depending principally upon the state of the circulation through the uterine veins. The characteristic trait, however, is always maintained: namely, the patulent state of the orifice, occupied by a transparent gelatinous plug of mucus, and its relaxed, irregular boundary. The annexed figure represents the uterus of a woman, twenty-five years of age, at the period of quickening of her second pregnancy: —



She was a person of full habit of body, suffering from piles and varicosis of the legs. There was also a similarly congested state of the lower uterine veins, some branches of which were seen ramifying upon the posterior labium and contiguous part of the cervix.

From the period of quickening to the end of the seventh month of pregnancy, the progressive changes which the *os* exhibits in its form and dimensions, are not sufficiently marked and regular to serve as a guide whereby to determine the precise stage to which the process has advanced; the orifice being as widely dilated, and its boundaries as much relaxed, in some at the end of the fourth month, as it is observed to be in others, two or three months later: this irregularity is principally owing to the age of the individual, the number of her previous pregnancies, the state of health which she happens to possess at the time, or her prevailing temperament or habit of body. The adjoining figure represents the uterus of a woman, twenty-six years of age, at the end of the seventh month of her fourth pregnancy, her previous pregnancy having terminated in an abortion at the end of the fourth month: —

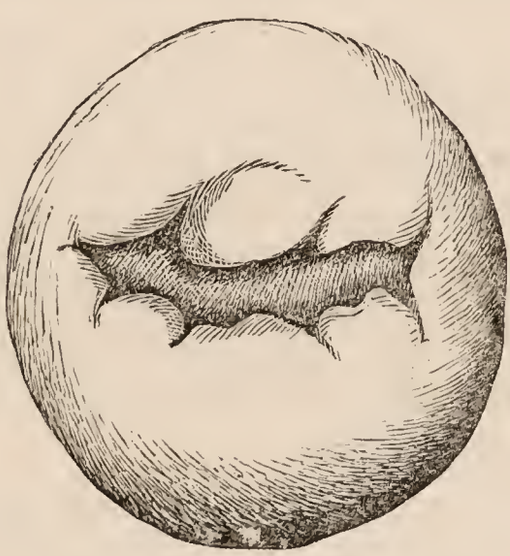


The same dissimilarity, arising from like causes, exists in the last stages of the process. The two following sketches represent the *uteri* of two persons, very different from each other in every respect, except as to their condition in life; both being Hospital patients. The first, as here delineated, was

taken from a stout, healthy-looking young woman, nineteen years of age, of the sanguine-lymphatic temperament, who stated that she had been married eleven months, and that she was eight months and a half advanced in her first pregnancy:—



The second was an emaciated, although healthy subject, thirty-nine years of age, having the bilious temperament predominating. She had previously borne nine living children at the full term of utero-gestation, besides one miscarriage at the end of the sixth month, brought on by over-exertion and



want. The upper division of the *cervix* in this, as well as in the preceding case, was obliterated, forming a portion of the general uterine cavity; but the labia were more flabby in the latter than in the former, presenting a soft, lobulated, irregular margin around the open orifice, but perfectly free from abrasion, or disease of any kind.

Tactile examination alone can seldom or never be trusted to, as a means of determining upon the existence or non-existence of pregnancy; unless the touch be exceedingly well practised and refined by ample experience. The reason is obvious. The boundaries of the *orificium uteri,* as seen in the preceding engravings, are not constituted of the identical material which formed the margin of the *os tincæ* of the unimpregnated uterus. They consist of the loose cellular and superjacent mucous tissue which was situated, in the unoccupied uterus, two or three lines external to the proper uterine orifice. After conception, these parts become infiltrated with serum; or sometimes the venous loops ramifying within them, are distended with blood, or become varicose; and the whole is projected more or less beyond the level of the parts as they existed before impregnation, thus completely obscuring the real *os tincæ.* On examining with the finger, this soft external boundary is very liable to escape notice; the more resisting part of the cervix being sought for, and found higher up in form of a firm ring, dilated certainly, in a very characteristic manner; but not conveying the same idea which the more relaxed external orifice gives when viewed through the speculum. The whole length of the cervix is expanded, from an early period of pregnancy, into a rounded tube, the size of an ordinary writing quill, and in this state it remains, but very slightly altered, until within a month or two of the completion of the term, when it merges itself, by little and little, in the general uterine cavity.

A circumstance is also noticeable in reference to this subject, of which the touch can take no cognizance, and which, even when the speculum is used, may possibly lead the inquirer into error in cases where the state of the *os* alone is referred to as an evidence of pregnancy. The gelatinous plug which occupies and appears to distend the cervix from an early period after conception, does not remain in that cavity

unrenewed: it is always in process of being replaced by a new secretion which is constantly going on; the old deposition being at the same time pushed downwards and dissolved, as it descends, in the vaginal mucus; but in so small a quantity as to escape the notice of the patient under ordinary circumstances. Sometimes, however, the action of the parts is suddenly increased, and the character of the secretion changed. The cervical plug is thus not unfrequently thrown off in a mass, leaving the cavity which contained it unoccupied, and in some measure collapsed, and the external labia fall together. This state of matters, however, is only of temporary duration, as a new supply of mucus is soon furnished, and the cervix becomes distended as before: but if an examination should be instituted at such a juncture, the practitioner, not being aware of the contingency, may be easily led to an erroneous conclusion.

Progressive changes in the size and appearance of the Abdomen.

During pregnancy, the abdomen undergoes considerable alteration both in its dimensions and shape, as well as in its outward aspect. Immediately after conception, a sense of fulness and distension is experienced, owing, probably, to excitement of the whole vascular system, and particularly of that part of it about the lower region of the abdomen and pelvis. After a few days, however, this increased action becomes less general, and finally results in an altered condition of the uterine vessels only. The abdominal fulness now subsides, communicating a sensation as if shrunk within its ordinary limits; which, however, is perhaps not really the case, except as compared with its state during the few days immediately preceding. In the third month, a decided tension of the abdomen is again experienced, and its volume goes on progressively increasing, always in a direction from below upwards. The

abdominal tumefaction is often considerable sometime before the uterus rises out of the pelvis, being eaused, at this particular period, by the partial displacement, and consequent elevation, of the bladder, and some of the small intestines and omentum; the enlarged uterus, whieh now oeeupies completely the pelvie cavity, and the distended folds of the broad ligaments, no longer permitting the descent of the superincumbent viseera. In the fifth month, when the body of the uterus extends above the brim of the pelvis, the abdomen is perceptibly rounded and prominent, but having its sides flattened and somewhat eompressed. As pregnaney advances, the swelling becomes more and more uniform, encroaching, towards the latter part of the proeess, upon the lower boundaries of the thoracic cavity, sometimes impeding the aetion of the diaphragm and of the digestive organs to a very inconvenient degree.

The aspect of the eutaneous surface undergoes, at the same time, a marked alteration. The margins of the abdominal museles become more clearly defined; a distinet indentation is observed between the *recti* muscles where none was previously notieeable, and the tendinous limits of the other broad muscles are also easily traeeable. The sub-eutaneous areolar strueture suffers great distension; the walls of the eells appear thiekened, raised, and of a pearly whiteness, enelosing small, irregular lozenge-shaped spaees, of a darker hue, and slightly depressed; giving to the whole a mottled appearanee, and eommunieating to the hand, when lightly passed over the surfaee, a sense of unevenness. This peeuliarity remains ever afterwards, and eonstitutes one of the most certain proofs of the previous existence of pregnancy. On the ascent of the uterus out of the pelvis, the umbilical cicatrix is observed to be less depressed, and is soon raised to the level of the surrounding surface; as pregnancy advances it becomes more and more prominent, so that, during the

last month of the process it assumes the character of a tumor instead of a depression.

Enlargement of the abdomen is a strong presumptive proof of the existence of pregnancy; but from what has already been said, this circumstance cannot alone be relied upon. The means usually employed for the purpose of investigating the causes upon which abdominal tumefaction depends, are manipulation and auscultation. In pregnancy the fœtal movements can often be readily felt by the simple application of the flat hand upon the surface of the abdomen; or, when this is insufficient, a little pressure will probably elicit the wished-for information. The ear placed upon the abdominal tumour in the position used for practising immediate auscultation, the pressure being gradually increased to a certain extent, is often effectual in rousing the fœtus into action. A more efficient method still, suggested by Dr. R. Lee, is the application of pressure upon the lateral walls of the abdomen. A hand pressed against each side, and the force gradually and steadily increased in an inward direction, will seldom fail of causing the child to struggle, if it be alive. Other information of a less decisive nature, is obtained by examining carefully the form and dimensions of the abdomen, the situation of the tumor, the regularity or irregularity of its surface, its degree of mobility, the presence or absence of fluctuation, and the character of the accompanying constitutional symptoms.

Auscultatory Evidence.

The only positive proofs, however, of the existence of pregnancy, are those afforded by the movements of the fœtus in utero, being communicated to the sense of touch as above described, or detected by the ear applied to the abdomen, either immediately, or through the medium of the stethoscope. The information obtained by this means of investigation, is the sound of the circulating current through the uterine sinuses

and placenta, called the *placental soufle;* and the pulsation of the fœtal heart, known as the *double battement.* I conceived the idea that important auscultatory knowledge might be derived by the use of the stethoscope *per vaginam.* Under this impression, a series of experiments were made with the instrument applied to the cervix uteri, thinking that one at least, if not both these sounds, might be heard at a much earlier period of pregnancy by this means than in the ordinary way. But on one occasion only, was I able to detect any sound besides an indistinct bruit, the effect, probably, of the vaginal vessels upon the shaft of the tube. In the case alluded to, the placental pulse was perfectly distinct, the patient being about three and a half months advanced. This was a case of implantation of the placenta over the lower part of the uterus. The patient miscarried soon after quickening, delivery being preceded by hœmorrhage.

The placental soufle, which is always synchronous with the heart's action, is caused by the passage of blood through the vessels of the placenta and corresponding part of the uterus. It is a sound of which no adequate idea can be given by oral description, but is perfectly characteristic; being decidedly different from any other sound elicited by the circulating current under any circumstances which have occurred to my experience; although authors have stated, that it may be perfectly simulated by compression of the large vessels, and especially by pressure of abdominal tumours upon the aorta and iliac arteries. I have examined many cases of morbid abdominal enlargement, but never mistook the vascular bruit in these, for the placental soufle. When perfectly audible therefore, it is, in my opinion, an unerring sign of the existence of pregnancy. It may be heard, in most instances, several weeks before the period of quickening, on which account it possesses a peculiar value, even as compared with the evidence furnished by the sounds of the fœtal heart, which, for the most part, are not heard until after this period.

The *double battement* is an unequivocal indication of pregnancy, being simulated by no other sound connected with the circulation of the human body. It consists in a rapid pulsation of the fœtal heart, the two movements of contraction and dilatation being distinctly audible, occurring in pairs, like the tickings of a small clock when hung a little out of equilibrium. The ordinary number of beats in a minute is about 140; they vary, however, from ten to fifteen beats below, to the same number above this amount. The pulsations are considerably more rapid in the early months, when first perceptible, than towards the completion of the process; a fact which may possibly prove of some service, when a more extended inquiry shall have been prosecuted, as a means of ascertaining the precise period at which pregnancy has arrived. As a general rule, it may be stated that the pulsations of the fœtal heart, at the end of the fourth month of pregnancy, average 156 per minute, and in the middle of the ninth month, about 134; there being a gradual diminution in the number of beats from the first to the last-named period.

The action of the fœtal heart appears to be but little affected by causes acting upon the maternal circulation. I counted the beats several days together, in a woman in the last stage of consumption, who died a few days after confinement. They were never below 140, nor above 146, although the maternal pulse ranged from 110 to 136 in the same space of time, in different examinations. I have also counted the fœtal pulse frequently in healthy females, in whom it has generally maintained the same uniformity; numbering 136 in one whose pulse was 72, and the same in the same individual on another occasion, when her pulse was beating 90 in the minute, having been accelerated by a hurried walk.

In states affecting permanently the health of the fœtus, however, and especially in congestion of the vascular system of the uterus, these movements undergo considerable variation. In a young woman, twenty years of age, of

plethoric habit of body, in whom the double battement was distinctly audible twelve days before the movements of the child were perceived by her, the fœtal pulse numbered 136 in the minute, the mother's, at the same time, beating 100; and on the day on which quickening took place, her pulse numbered 116, while that of the fœtus was only 128. On this latter occasion, the patient, — who applied for professional advice on account of having aborted at a corresponding period of her previous pregnancy, and feeling fearful of a similar result in the present instance — was labouring under a sense of great fulness and distension of the abdomen, bearing-down, violent pain around the lower part of the person of an intermittent character, and general constitutional disturbance; — symptoms precisely similar to those which she remembered having experienced previous to her former miscarriage. A pulsation, synchronous with the heart's action, was communicated to the hand on being applied to the surface of the abdomen; the same evidence of vascular plethora was communicated within the vagina; and the cervix uteri was very tumid and varicose. She was immediately bled to the amount of twenty ounces, after which the double battement became more free and distinct, the beats numbering 144 in the minute, being eighteen pulsations quicker than before the operation. In less than half an hour after the operation, the fœtal movements were perceived for the first time by the patient, and have since continued. She was delivered of a full-grown, healthy child, on the 14th of April, 1847, seventeen weeks after the depletion.

Appearance of the Breasts.

At an early period of pregnancy, slight fulness of the breasts is perceived, accompanied by occasional pain of a lancinating character, shooting from the centre of the gland towards the epigastrium, and sometimes in the direction of the axilla or shoulder. As pregnancy advances, the gland in-

creases in size, and sometimes a considerable quantity of milk is secreted, especially in the latter months of pregnancy. But the most remarkable change observed in this organ, and one to which great importance has been attached by writers as an indication of pregnancy, is connected with the appearance of the nipple and its areola, both which assume a much darker hue than formerly, becoming, in women of a swarthy complexion, almost black. The nipple itself, is, at the same time, enlarged and irritable; and the small sebaceous follicles, situated within the surrounding circle, are unusually developed. The subcellular structure undergoes the same kind of metamorphosis as that already described in abdominal enlargements, the walls of the cells becoming persistently thickened, raised, and of a silvery whiteness, and affording strong proof that pregnancy has previously existed. As this appearance may be occasioned however, by distension of the organ from other causes, the evidence which it affords cannot of course be considered as infallible. As a general rule, enlargement of the breast, with simultaneous developement of the nipple, areola, and follicles, may be valuable as an auxiliary means, but can never alone be admitted as positive evidence of the existence of pregnancy.

Effects of Pregnancy upon the Skin and the Parenchymatous Textures.

An early indication of pregnancy is an altered appearance in the aspect of the surface, accompanied with emaciation of the body generally. These traits are more strongly marked in some habits and complexions than in others. In women of the bilious temperament, a yellowness about the upper lip, sides of the nose, eyelids, temples and forehead, is almost invariably observed, and not unfrequently, during some part of the process, the skin becomes more or less jaundiced. This change of tint is very distinctly seen in old cicatrices, especially when situated about the face or neck; and

which, although previously lost in the surrounding texture, will generally appear in palpaple relief from the sound skin before any other change is notieeable. In lymphatic subjects the whole surfaee assumes a sallow hue, and in places where the skin is thin and devoid of fat, as the eyelids and temples, it assumes a dark-brown tinge not unlike the mammary areola. In those of the sanguine temperament, the skin, naturally smooth, fair, and finely organized, loses its freshness and elasticity, beeoming pale, waxy, and attenuated; the fat is absorbed, the cheeks fallen, the eyes sunk, the nose pinched, and the whole appearance is peeuliarly changed, though not in a manner indieative of loss of health. With the advanee of pregnancy, these appearances beeome more and more characteristic; the superficial veins, especially the angular braneh of the facial, the temporal, and the supraorbital divisions of the frontal, deseribe their blue course along the features; and the superficial mammary veins, branching towards the neck and shoulder, are more distinetly traeeable.

Obstinate skin diseases sometimes disappear during pregnancy, and reappear after laetation. Occasionally, such complaints undergo a complete cure, after having resisted long and varied eourses of medical treatment. A patient, some time since under my eare, who had been several years previous to marriage affeeted with lepra palmaris, of a very obstinate and troublesome charaeter, for which various remedial measures had been tried without suceess, beeame eompletely eured soon after pregnancy commenced; and although it is now six years sinee, and she has not been a second time pregnant, the disease has not returned. Pregnancy also has a tendency to retard the progress of some organie diseases, and may materially eontribute towards their cure, by allowing time for the application of remedies during their state of quieseence. It is well known that the more urgent symptoms of phthisis pulmonalis are thus, for a time, arrested, although this devastating disease is seldom rendered by this delay less disastrous in

its results. Certain constitutional complaints of alarming appearance, especially those arising from functional derangement of the generative organs, as chlorosis, hysteria, cachexia, familiarly known as decline, are frequently removed by marriage, and the patient is thereby restored to a state of perfect health.

On the other hand, disease, in some instances, manifests itself only during pregnancy; — the system, under these circumstances, being in a state eminently favourable for the origination of derangements arising from congestion, and to the developement of inflammatory affections of the mucous and serous tissues. Thus, cases of peritonitis or pluritis, gastro-enteritic irritation, affections of the cheilo-poietic viscera, and of parts connected with the portal circulation, as well as disturbances of the nervous system, often put on alarming features during pregnancy.

Changes observed in the Fluid Products of the Body during Pregnancy. Properties of the Blood.

During pregnancy, the blood undergoes certain changes in its component proportions, determining corresponding deviations in the nature of some of the organic products; and the mass of circulating fluid is increased in quantity. Whether these changes be owing to an altered condition of the functions of digestion and assimilation; or to the local excitation exerted upon the organs of generation during the period of their reproductive activity, it may be difficult to determine. There is no doubt that the state of the system throughout the process is very similar to that which immediately precedes inflammation under ordinary circumstances, and that pregnancy very powerfully predisposes to inflammatory action, whether of a local or constitutional nature. "When some local cause," says Dr. Carpenter, "affecting the solid tissues of a certain part of the body, produces inflammation in them, their normal relation to the blood is altered; the consequence is, that

the blood in passing through them, undergoes a different set of changes from those for which it is originally adapted; and thus its own character undergoes a change, which soon becomes evident throughout the whole mass of circulating fluid, and is, in its turn, the cause of morbid phenomena in remote parts of the system." [1]

A popular characteristic symptom of early pregnancy is acceleration of the pulse, accompanied with irregular distribution of the animal heat throughout the body. This change is observed at different periods, varying from a few days to a few weeks after conception; generally, it may be detected by the end of the first week, sometimes earlier. At this period, also, blood drawn from the body, and allowed to coagulate, is said to exhibit a greater degree of tenacity of its crassamentum, with a perceptible increase in the quantity of its fibrin in proportion to the red globules; conditions very similar to those observed in states of inflammation. Becquerel and Rodier analysed the blood of nine pregnant women, at different periods of the process, and arrived at the conclusion, that "pregnancy exercises a marked influence on the composition of the blood. The density, both of the defibrinated blood and of the serum, is diminished, the water, the fibrin, and the phosphorised fat are increased, while the corpuscles and the albumen are diminished." [2] The experiments of Andral furnish results somewhat different from the preceding. He was led to the conclusion that, "during the first six months, the fibrin was below the natural standard; and that it subsequently varied, usually undergoing an augmentation between the sixth and seventh months, and again in the eighth and ninth months. There was also a diminution of the red globules, and these circumstances combined, favoured the appearance of the buffy coat."

[1] Principles of Human Physiology, paragraph 590. [2] Simon's Animal Chemistry, translation, by Dr. Day, vol. i. p. 336.

The increase of fibrin in the blood during the process of utero-gestation, has been objected to as a general rule, by Dr. Montgomery, on the ground that blood is seldom drawn from pregnant women, except when labouring under disease. In several instances, however, which have occurred under my own notice, wherein venæsection was practised for the relief of vascular congestion of the lower parts of the body and limbs, the blood drawn always exhibited the buffy coat; the coagulum was larger in proportion to the quantity of serum than is usual in healthy blood, and was generally of greater tenacity, and lower in specific gravity. Reasoning from physiological analogy, this certainly appears to be the real state of the case generally. For, as fibrin enters largely into the composition of solid animal tissue, the requirements of the new being necessitate a constant supply of this material from the mother; in whom, it is very likely, that an increased supply of it is elaborated for the purpose; and hence it must occasionally be met with in real excess, in the maternal blood.

Suppression of the Menses.

As a general rule, menstruation is suspended during the period of pregnancy and lactation. When suppression takes place without assignable cause, the woman being of a proper age and in good health, it is usually looked upon as a certain sign of the existence of pregnancy. Indeed, considering the important physiological changes effected upon the uterus in its gravid state; the complete occupation of its internal surface by a newly-formed, organized structure; and the manner in which its contents are excluded from external influences by the peculiar arrangement of the membrana decidua; it would appear next to impossible, that any escape of blood should take place from the body of the organ, without entailing serious consequences. Instances are not wanting, however, tending to prove that this rule is not without exceptions; as in cases of

super-fœtation, or of twins, where, after the birth of one fœtus, perhaps fully matured, another, imperfectly grown, may remain and thrive within the womb until the completion of its term: the first having been followed by the expulsion of a placenta and the ordinary lochial evacuation.

But notwithstanding the state of parts now alluded to, the phenomena of menstruation may be regularly repeated during a great part, or even throughout the whole period of utero-gestation, without materially interfering with the process; the discharge not differing, *apparently*, either as to its quantity, its properties, or the period of its duration, from what occurs under ordinary circumstances. This fact has been noticed by writers on obstetric medicine from the time of Hippocrates to the present day; although I am not aware that a satisfactory explanation of it has hitherto been rendered by any author. Of numerous instances of this kind, having occurred under my own observation, the following may be mentioned in illustration of what is commonly denominated *Menstruation during pregnancy:*—

1. Mary Donovan, age twenty-nine years, a healthy woman of the lymphatic temperament, always menstruates once during pregnancy. When not pregnant, the menstrual discharge continues about four days at each return, being moderate in quantity. About three weeks after conception, the menses appear in unusual abundance, sometimes being mixed with small coagula, and continuing to flow for six or seven days. She is always first aware of her condition from the circumstance of this profuse menstruation. She has borne six living children at the full term of gestation, in each of which the same phenomena have occurred; delivery having taken place precisely eight months afterwards. It may be remarked, that menstruation in this form, is by no means uncommon.

2. Mrs. S., a lady twenty-two years of age, of the sanguine temperament, menstruated until the period of quickening of her first and only pregnancy, which terminated sueeessfully, on the 20th of June, 1846. The menses returned at proper intervals, continued the same number of days, and were the same in quantity and appearance as formerly, four times after marriage; and she was delivered of a full-grown living ehild nine months and two days after the day on whieh she was married.
3. A. M., forty-one years of age, has had fourteen pregnaneies, of whieh three terminated prematurely. She menstruated, to my knowledge, five times during her last pregnaney, which terminated favourably, on the 17th of January, 1846. The fœtal movements had been suffieiently lively two or three weeks before the fifth menstrual reeurrenee, and she was delivered of a full-grown healthy fœtus, four months afterwards.
4. Mrs. C., thirty-two years of age, had a diseharge of blood, every way similar to the menses both as to quantity, appearance, and the period of its duration, when three months advaneed of her last (her fourth) pregnaney, whieh terminated successfully, in November, 1845. The discharge was three times repeated afterwards, in a similar manner, at intervals of a month, namely, at the end of the fourth, fifth, and sixth months of the same pregnaney. She had also a leueorrhœal discharge, of purulent charaeter, oceupying each interval and eontinuing to the end of the period; this was observed to beeome augmented at the end of the seventh and eighth months, attended with intermittent pains of the loins and hypogastrium. Two days before labour eame on,

slight hœmorrhage commenced, and did not cease until after the liquor amnii had escaped. The placenta was attached high up in the uterus, and not near the cervix, as was ascertained by auscultatory means, several times during pregnancy, and confirmed afterwards, on its extraction after labour.

5. Mrs. L., a delicate, lymphatic-looking woman, age twenty-nine years, is mother of one child, born four years after marriage, and which is now three and a half years old. This person, who has had no other pregnancy, began to menstruate, with difficulty, at the age of eighteen, after having had leucorrhœa, which was periodically augmented, for more than half a year previously. This morbid product was a white glairy mucus, before marriage; but since, it has always been thick and yellow, and decidedly purulent. Menstruation, however, has been regularly performed since its commencement without a single interruption; being continued in its usual form during the whole period of pregnancy and lactation, and she was unaware of the existence of pregnancy, believing herself to be dropsical, until within a few weeks of her delivery. She has long been in delicate health.

6. Mrs. W., thirty-three years of age, of the sanguine temperament, is mother of four children, of whom the last was born in August, 1845. The first three pregnancies were not different from what is commonly observed. She again exhibited some of the usual signs of pregnancy; but the menses appearing at the accustomed periods, continuing the usual length of time, and, as far as could be ascertained on a superficial examination, bearing the ordinary characters, she was believed to be suffering from

internal disease, for the relief of which, after undergoing a course of treatment, change of air was recommended. She accordingly decided upon visiting her friends in Ireland. Menstruation had already commenced when she sailed, and during the voyage a profuse flooding came on, which continued, in a moderated degree, several days after her arrival in Dublin. At the end of three weeks, she returned home, a little improved in health, but the body was considerably larger, although no distinct fœtal movements had been perceived. In due time, at the return of a catamenial period, she was delivered of a fine healthy child at the full term of gestation. This patient has, for several years, been troubled with a leucorrhœal discharge, accompanied with bearing-down, and irritable bladder.

7. Catherine Finigan was admitted a home-patient of the Manchester Lying-in Hospital, under my care, November, 1845. She was a sickly-looking woman, forty years of age, mother of eight children, and in the eighth month of her ninth pregnancy. She was menstruating at the time of her admission, and said she had done so regularly every month since the commencement of the process. She was delivered a month afterwards, of a full-grown healthy child, the menstrual discharge having appeared two days previously. Menstruation was also regularly repeated during the whole period of lactation; and the same train of phenomena were stated to have occurred in her last, but not in any of her previous pregnancies. She had for three or four years been troubled with leucorrhœa, lumbar and hypogastric pains, bearing-down, and occasional micturition.

Different views have been entertained, at different periods, concerning the nature of the discharges in question, and the manner in which they are furnished: these, however, being founded altogether in theory, it can in no way profit the reader to comment upon. A considerable number of cases, similar to the preceding, have occurred to myself, and have been submitted, whenever practicable, to specular examination. The results are as follows: The discharge, when moderate in quantity, was similar to ordinary menstrual blood, both in colour, consistence, and in its chemical reaction: it differed materially, however, in different persons, and in the same person at different times, with respect, especially, to the relative intensity of its alkaline properties. When in considerable abundance, small clots were sometimes thrown off, as happens, occasionally, in cases of menhorrhagia. All the patients had leucorrhœa, in greater or less degree, accompanied by the train of sympathetic disturbances usually attendant upon these affections. This product communicated yellowish stains to the linen upon which it was deposited, and exhibited alkaline properties; evidences of a conclusive kind as to its purulent character.

On examination with the speculum, inflammation or ulceration of one or both labia, or of the cervix uteri, complicated, in some instances, with warty excrescences growing from the cervix, or from some part of the vaginal membrane, vaginitis, &c., was met with in every case, without an exception. Fifteen cases were submitted to this kind of examination at the time the blood was flowing. In not one of these did any fluid whatever escape from the interior of the uterus; the orifice being completely occupied at the time by a plug of transparent mucus. On removing the accumulated secretion by means of a piece of lint, the parts were immediately afterwards covered by a coating of blood, which was distinctly seen issuing from innumerable pores on every part of the diseased surfaces, and soon being in sufficient quantity to

triekle down into the speculum. This blood was widely different, in its sensible properties, from that eolleeted in the tube during its introduetion, or at the os externum; being more florid, more strongly alkalescent, and soon subsiding into a dryish clot, whieh could be separated from the interior of the instrument in form of a small eake of erassamentum. This was never the ease with the former, whieh remained fluid or soft, for a considerable time.

The evidenee now produced appears suffieient to establish, as a general rule, to which I am not as yet aequainted with an exception, that the blood diseharged in cases of alleged menstruation during pregnaney, is furnished, not by the lining membrane of the uterus, nor by any healthy seereting surface — except sometimes perhaps the inferior part of the inner eervix; but by the lower extremity of the uterus external to its eavity, or by the eontiguous vaginal refleetion, being in a state of suppurative inflammation. The faet is always demonstrable by the aid of the speculum. And where speeular investigation is found impraetieable, there is still no difficulty in forming a diagnosis, so long as the linen of the patient can be submitted to oeular inspeetion.

Absence of Menstruation before Pregnancy.

It is popularly believed, that before the first menstrual advent, the health remaining unimpaired, the aptitude for procreation does not exist. In eorroboration of a statement previously advaneed, that it is "not necessary, in order to the effieient aecomplishment of the process of gestation, that the menses should previously have appeared," the following cases may be given: —

1. A stout Irish girl, in her sixteenth year of age, was admitted a home-patient of the Manehester Lying-in Hospital, in August, 1844. She was then in the eighth month of her first pregnancy, and stated that she had never menstruated, or had had any vaginal

diseharge whatever, and that her health had been unexeeptionable. This statement was corroborated by her mother, who was also in attendance.

2. A young Irish woman, of the bilious temperament, was married at the age of seventeen. She beeame a patient of the Manchester Lying-in Hospital, and was delivered, thirteen months after marriage, of a living, full-grown child, in presenee of one of the Hospital midwives, on the 16th of May, 1845, never having had, previously, any vaginal discharge.
3. Theodosia Y., a factory operative, was married at eighteen years of age, and delivered of her first child precisely nine months after marriage, never having menstruated.
4. R. T., a healthy young woman, was delivered, in presenee of one of the Hospital midwives, of her first ehild, at the age of seventeen, in November, 1844. She had never menstruated before marriage; but the menses appeared, for the spaee of two or three days, about three weeks after marriage, pregnaney already existing, as was proved by the faet that she was delivered of a child, apparently at its full term, a week before she had been married nine months.
5. A stout Irish girl, of the lymphatic temperament, was married at fifteen years of age. She did not become pregnant until ten months after marriage, and was delivered of her first ehild five months before the completion of her seventeenth year. She had never menstruated, or had any vaginal discharge.
6. Mrs. S., of the bilious temperament, in respectable circumstanees, bore her first ehild, at the full term of utero-gestation, at the age of nineteen — twelve months after marriage, and had never before menstruated.

7. Rachel Stephens, a factory operative, was married at eighteen years of age, and aborted before the period of quickening five months after marriage. She had never previously menstruated.

8. A young woman, seventeen years of age, a dress-maker, was brought to me by her mother, in June, 1844. She had been, for several months previously, in a weak state of health, the principal symptoms being languor, nausea, loss of appetite, and swelling of the belly. She was thought to be suffering from retention, never having menstruated. From some hints that escaped in her relation of a previous course of treatment, which had been administered by a female practitioner, and with which circumstance the mother had been hitherto unacquainted, I expressed my suspicions of the existence of pregnancy; this was strenuously denied, however, by the patient. The breasts were considerably developed, although flaccid; the nipples and areolæ dark and well defined. The abdominal tumour was hard, circumscribed, without fluctuation, and situated low in the cavity. The umbilicus was prominent. No sound was elicited by the stethescope. An active saline aperient was prescribed. The following morning labour pains came on, and in due time, she was delivered of a still-born fœtus, about seven months grown.

9. An Irish woman, named Katherine Healy, thirty-two years of age, was admitted a patient of the Lying-in Hospital, May, 1846, being the seventh time pregnant. In reference to her early history, she stated that she was married at the age of fifteen, but had no discharge of any kind, either menstrual or leucorrhœal, before the end of her

seventeenth year, when the menses appeared, for the first time, without an unfavourable symptom. She did not become pregnant, however, until fifteen months afterwards, and was delivered of her first child at the full term of gestation, at the age of nineteen years and two months.

Under circumstances like the preceding, the absence of menstruation is alike valueless, both as a proof against the aptitude for conception, and also as a sign of pregnancy. There is one point connected with some of the above cases upon which a passing observation may not be uninteresting, as it appears to bear importantly upon a question relating to the history of menstruation about which recent writers are still at issue. It was already noticed, that one of the principal causes of the early puberty of the Asiatic and the African female was referrible, according to some authors, to the lax state of morals which prevails among these people, permitting, under certain conditions, unrestrained indulgence of the sexual appetite at a very premature period of life—in some instances, even during childhood. If this circumstance be really conducive to an early developement of the sexual organs, we ought to expect—led by analogy—an earlier puberty among the labouring and destitute population of large towns, than among those of the upper classes of society. But we possess ample proof that the very reverse of this is the fact; the average difference in the age at which the change occurs, in the one class and the other, being at least sixteen or eighteen months. Yet no one will, for a moment, believe that virtue is less cherished, or that the moral status is absolutely lower among the educated than the ignorant. Indeed, considering the innumerable temptations to which young females employed in manufactories and shops, and as domestic servants, are constantly exposed in their unavoidable collision with those of the opposite sex occupying a grade above them, and the various artifices, too

often inconsiderately and culpably had recourse to by the latter, assisted by whatever influence their wealth and position may enable them to employ — to bring ruin and disgrace upon the creature whom they are morally and religiously bound to support and protect; it is wonderful that any escape through childhood uncontaminated. These, with other dangers which it is not possible here to enumerate, are evils to the influence of which the educated female is seldom or never necessarily exposed.

Three of the individuals above-mentioned, (Nos. 2, 5, and 6,) did not only *not* menstruate before pregnancy, but did not become pregnant until a considerable time after their marriage; and the individual marked No. 9, did not menstruate until more than two years after marriage was consummated: they were all in excellent health the whole time. Doubtless, in cases where the changes of puberty are already impending, but remain unaccomplished, matrimony may assist in their developement; but, from the numerous cases brought under treatment for diseases consequent upon impure connection before the appearance of the menses, it is questionable if sexual intercourse have any influence whatever in promoting, prematurely, the functional changes of the organs of generation.

State of the Mucous Membranes during Pregnancy.

At the commencement of pregnancy, the secretion thrown out by the lining membrane of the uterus, differing, at all times, in its properties from ordinary mucus, presents some important peculiarities which it does not possess at other times. It is more thick and plastic, and is furnished, for the time, in greater abundance. None of this product, however, escapes from the cavity of the uterus, but becomes adherent to its inner surface, appearing to incorporate itself with the proper mucous tissue; and is ultimately changed into a new,

organized structure, destined to perform an important office in the subsequent process. The secretion from the surface lining the neck of the uterus is also changed, being more glutinous. This, which remains upon the part by which it was furnished, and is very different from the product which occupies the higher division of the uterine cavity, constitutes what is usually denominated the gelatinous plug of the cervix uteri, already mentioned. The lining membrane of the vagina participates actively in the metamorphosis now being effected; its substance becomes turgid, owing to the increased quantity of blood circulating through its capillaries; its temperature is perceptibly elevated; its organic product is more abundant, more opaque and milky, less glairy, and more intensely acid than at other times.

The great afflux of blood towards the organs of generation, commencing at the time of conception, and continuing to increase afterwards, determines a sensible elevation of temperature in the parts, as is evident to the feelings of the patient, and may be ascertained by the touch or the thermometer. This change is so slight, however, at first, and increases so gradually as not to be always particularly noticed by the patient, although its actual augmentation sometimes amounts to several degrees. When, however, by whatever cause occasioned, the *embryo* has suddenly perished, the circulation of blood through the organs is greatly reduced in consequence, and the fall in temperature is particularly striking to the patient's feelings; — a sense of coldness in the *hypogastrium* being one of the earliest and most certain indications of the death of the fœtus in utero.

The organs of digestion and assimilation, are generally among the first to participate in the sympathetic disturbances awakened during pregnancy. Nausea, vomiting, pyrosis, heart-burn, capricious appetite, loathing at all ordinary food, and an uncontrollable longing for articles of an unsuitable

kind, are among the most frequent symptoms of this elass. Sometimes the natural appetite is greatly incrcased, becoming even voraeious; and the hearty mcal is no sooner taken than rejected. By an extension of this sympathetic irritation to other parts of the alimentary eanal, on the one hand; or to the mouth, nose, fauees, and bronehial passages, on the other; symptoms of a corresponding nature are soon manifested. The bowels, for instance, are extremely liable to become deranged, being somctimes obstinately sluggish, at other times the contrary; it is not uncommon to mcct with severe aecessions of diarrhœa, the attacks coming on periodically, at times corresponding to the menstrual periods, and continuing like these diseharges, three or four or more days at each return. Nasal and bronehial catarrhs, attended with a distressing cough; violent pain of the head, and high febrile exeitement, are not of uncommon oceurrenee as diseases of pregnaney. They are somctimes aggravated so as to eonstitute severe forms of bronchitis, laryngitis, or influenza, requiring an aetive and judicious course of treatment. Sometimes thc salivary seeretion is immoderately augmented. A patient, lately under treatment, had salivation during thc whole of pregnancy, as profusely as if she had been all the time under the influenee of mercury. The parotid glands were perceptibly enlarged and tender, the gums were spongy, thc tonsils turgid, and the fauces irritable; the act of dcglutition being attended with eonsiderable pain. The symptoms completely subsided after delivery. Another patient was similarly affeeted until the end of the seventh month. At this period, the brcasts bccame distcnded with milk whieh flowed freely from thc nipples, upon which event the salivary seeretion completely subsided.

Secretion of Urine.

Thc urine has long been popularly regardcd as capable of affording a valuable means whereby thc existence of pregnaney

may be known; and, during the early months, it was the test invariably, and almost exclusively resorted to formerly, for this purpose. Undoubtedly the urine undergoes considerable changes, both as to its quantity and its sensible — perhaps also, its chemical properties, during pregnancy; but these are so inconstant, and so frequently simulated in other conditions of the body, as to become of little value as a means of diagnosis. The works of ancient writers, from the earliest periods to the middle of the last century, but especially those of the middle ages, are elaborate in their descriptions of its appearance, regarding it as a valuable aid, not only in pregnancy, but also in every morbid condition of which the human frame is susceptible. It were superfluous to dwell upon the inadequacy of this as a test of pregnancy; although it must be admitted to be deserving of more attention than pathologists have of late been willing to allow.

Matrons of considerable experience, and nurses who, generally speaking, are much better informed in matters of this kind than medical men, place implicit reliance upon the appearance of the urine as a test in pregnancy. The say, that when the urine of a woman with child, is allowed to stand for some hours, white, loose-looking flocks, with here and there small opaque specks like minute seeds of different sizes among them, are seen floating in the fluid, and which, after some time longer, fall down in form of a loose white sediment. This idea is evidently of considerable antiquity, as very nearly the same description is given by Salmon, in a work published more than a century and a half since. "In a healthful woman's urine," says this author, "if it be *troubled a little, and green or blew, with things like thin bran swimming in it, or like starch,* which after settling make a *thick sediment like toosed wool,* she is with child." [1] In another place he says, "In a woman with child and in health, *the sediment is like carded*

[1] Synopsis Medicinæ, lib. 2, page 259, Lond. 1679.

wool, and there are little things in it about the bigness of hemp-seed, sometimes infinitely smaller, and sometimes much greater, and more white than ordinary sediment." [1]

The attention of the profession was recently directed to this subject by M. Nauche, who, in a paper published in the Lancet for August, 1831, states, that he has been able to detect the existence of pregnancy, by means of a chemical test applied to the urine. He directs that the urine of pregnant women, or of nurses, be left to stand for some time, say from thirty to forty hours, when a deposit takes place of a white, flaky, pulverulent, grumous matter, being the caseum or peculiar principle of the milk found in the breasts during gestation. "Feeling alive," says Dr. E. Kennedy, "to the benefits that would result in practice from having a certain test, regulated by chemical laws, the able assistance of Mr. Kane was obtained, and a variety of specimens of urine submitted to examination, when the conclusions arrived at on this subject, were, —

"That a white, flocculent precipitate, similar to that described, subsided spontaneously after twenty-four hours, not only from the urine of pregnant women, but also in equally great quantity from that of a virgin aged fourteen, and that of a woman nursing for two months.

"That, in all cases of pregnancy, the urine was found to contain a small quantity of albumen in its incoagulable state, although this was not observed in the urine of unimpregnated females contemporaneously examined.

"From these facts, the inferences deduced were, that the spontaneous deposit could afford no assistance whatever in detecting pregnancy; and that as to the albumen, its validity as a test would be rendered very questionable by the frequency of its appearance as an effect of diet, eating unleavened bread, for instance, as well as from certain states of disease, such as

[1] Synopsis Medicinæ, page 264.

dropsy, steatomatous deposits, &c., exactly the cases in which the want of an accurate test is experienced." [1]

Sensorial Manifestations.

In the earliest stages of pregnancy, often on the second or third day, a sense of chillness and momentary shivering is experienced, followed by flushes of heat, accompanied with slight swelling of the whole body, but especially of the lower part of the abdomen; and with an occasional vermicular movement of the bowels, as if caused by accumulation of flatus. The countenance is pale, the eyes dull and heavy, presenting an appearance as if the person had been weeping; and sometimes a feeling of anxiety and lowness of spirits is experienced, for which no adequate cause can be assigned. The sense of smell, of hearing, of sight or of touch, may become painfully acute, or palpably impaired; occasionally, one of these is, for a time, completely suspended. But the organ of taste is most of all subject to these functional deviations, manifested in an altered state of the mucus of the mouth or of the saliva, which appear suddenly to acquire strong acid or alkaline properties. This, moreover, is not always imaginary, as is proved by the chemical reagency of these fluids. "On à regardé," says Maugars, *(Dissert. sur les Signes de la Conception,* &c.,) "comme un signe de la fecondité et de conception, lorsque l'odeur seminale se propageait jusqu' à l'organe du goût."

The faculties of the mind, and the social affections, appear sometimes strangely altered. Singular and irresistible dislikes are conceived for persons and things about which the patient was previously altogether indifferent; her manner, though naturally mild and engaging, becomes severe and repulsive; her temper sullen and fretful, or extremely irritable. Those whose cerebral organs are unusually developed, or are

[1] On Obstetric Auscultation, page 56.

suseeptible of high cultivation, are subjeet, during this state, to severe fits of despondency, or of enthusiasm, eonneeted, for the most part, with religious subjects; and these states, not unfrequently, pass into aetual aberration of intelleet. A lady, with whose family I have beeu intimately acquainted since ehildhood, and on whom I was lately in attendance during a protraeted illness connected with the last menstrual climacterie, experieneed this last mentioned state to a very painful extent. She has borne nine childreu at the full term of utero-gestation, besides two miscarriages, each of which occurred, without assignable cause, in the fourth month. During the whole period of each pregnancy, she beeame eompletely ineapaeitated for the management of her domestie eoneerns, although, at other times, she was not only perfectly colleeted, but possessed an amount of information not usually found in persons of her condition. She related to me, that during her last pregnaney, in her forty-seeond year, the usual attaek eame on about a month after conception. She was eopiously bled with leeches about the head, eupped on the neek and spine, and blistered; and afterwards, the symptoms continuing to inerease in severity, she was removed, for safe keeping, to an asylum, where she remained until after her delivery. For some months previous to my attendance, the patient being at this time in her forty-eighth year of age, menstruation had been very irregular, and occasionally profuse, the intervals being occupied by a plentiful vaginal diseharge of a muco-purulent — sometimes sanious or watery eharaeter. On specular examination, the *cervix uteri* was greatly hypertrophied; its anterior labium was indurated and irregular, projecting, in a eonieal form, eonsiderably below the level of the posterior *labium;* this, also, was thickened, and oecupied by a well-defined, varieose uleer, extending, in an upward direetion, to some extent within the cervix. Its surface, which was uneven, of a darkish colour,

and spongy appearance, presented several points whence blood issued during examination; and a quantity of purulent and grumous accumulation, which was removed by means of lint, emitted an offensive odour. Upon examining this part during a menstrual period, the discharge, which was occasionally accompanied by the escape of small clots, was seen exuding from the ulcerated surface, upon which several small coagula were also adherent. The complaint was perfectly cured by means of local bleeding from the hypogastric and sacral regions; the application of nitrate of silver to the part affected; and the administration of oxymuriate of mercury in doses of a tenth of a grain thrice daily, and afterwards of chalybeates. From the account she gave of her former ailments, — the character of the discharge, bearing-down, functional disturbance of the urinary organs, and other distressing symptoms about the lower abdominal region, — there is little doubt that the same or similar organic mischief existed then as at the change of life, and that the complaint treated as idiopathic cerebral irritation, was entirely of an hysterical nature.

It is not always, however, that such an unfavourable state of things is met with during pregnancy; — often no other inconvenience is experienced beyond that which necessarily accompanies the puerperal period; and even in the more aggravated cases, it is seldom that more than two or three of the symptoms above-enumerated, co-exist with any considerable degree of severity. Sometimes, indeed, the changes observed are of a widely different character, and not unfrequently there is complete emancipation from troubles under which the individual may have long been a sufferer. Thus, amelioration in the symptoms of chronic rheumatism, asthma, phthisis, and cutaneous diseases, is often the welcome harbinger of breeding; the multitude of hysterical complaints consequent upon dysmenorrhœa and other forms of defective menstruation frequently undergo complete cure by marriage,

and the disposition, previously gloomy and discontented, at once becomes cheerful and happy. Dr. Montgomery, amusingly relates of a gentleman who, "being afflicted with a step-mother naturally more disposed to practice the *fortiter in re* than to adopt the *suaviter in modo*, he and all the household had learned from experience to hail with joyful anticipations the lady's pregnancy, as a period when clouds and storms were immediately changed for sunshine and quietness."

The evidence furnished by a great majority of the signs now enumerated must, for reasons before stated, be regarded as very inadequate, being altogether of a negative character. Functional deviations and organic changes, — as suppression of the menses, for instance, enlargement of the abdomen and of the mammæ, &c., are frequently associated with disordered states of the system, unconnected with the process of utero-gestation. Ascites, ovarian tumour, morbid enlargement of the uterus, of the liver, spleen, mesenteric glands, tympanitis, adipose accumulations, and whatever is capable of producing distension of the abdominal parietes for a period, may induce most of the appearances just mentioned, thus rendering the diagnosis in many cases of pregnancy extremely difficult. "The tumour supposed to be the body of the uterus may be tubercular, contain hydatids, water, air, mole, or polypous growth."[1] The altered form of the *os uteri*, so far as the touch is capable of distinguishing; increase in volume and consequent displacement of the uterus, and the phenomenon of *ballottement;* disturbance of the digestive and sensorial functions, may be the result equally of disease as of pregnancy; the evidence, therefore, which they are capable of supplying can only be received, at the best, as of an auxiliary and subordinate character.

There are, however, three very distinct and unequivocal

[1] Kennedy.

phenomena which, invariably present during pregnancy, are never perfectly simulated under any other condition of the body, whether healthy or diseased. The *first*, and most important of these, is the double *battement*, being a peculiar sound produced by the pulsation of the fœtal heart communicated to the ear of the examiner upon its application, mediately or immediately, to the surface of the abdomen; the *second*, is the placental *soufle*, said, in some instances, to be closely imitated by pressure of morbid growths upon the large, deep-seated arterial trunks of the abdomen and pelvis; but which, under all circumstances, I believe to be a sound *sui generis;* the *third*, consists in an altered state of the *os uteri*, which, previously a mere chink or fissure, having, in the virgin uterus, reverted extremities, and being bounded behind and before by even, linear margins, becomes an irregularly rounded or oval, patulent orifice, which is occupied by a plug of transparent, gelatinous, mucus; and surrounded by a soft, flabby, uneven, lobulated margin, indentated with a number of shallow unbroken fissures of varying shapes and dimensions. The characteristic change in the form of the *os* is owing to hypertrophy of the uterine walls and dilation of its cavity; and especially to infiltration into the sub-tissue of the labia uteri, causing distension of its cells, and also to a varicose state of the veins ramifying upon this part of the organ. The boundary of the *orificium uteri* is thus made to appear of nearly equal thickness on every side, and the distinction between the anterior and posterior labium, before marked by the contracted portion forming the commissures on each side, is, for the time, almost, if not entirely lost. This organic change is probably the only sign by the aid of which pregnancy can with certainty be declared to exist, during the first twelve or fifteen weeks of the process. The two first-named manifestations become available only after this period; the fœtal heart beating as yet too feebly, and the uterine circulation being not suffi-

ciently concentrated, to be audibly recognized. Towards the end of the fourth month, however, even before the uterus has ascended beyond the upper boundary of the pelvic cavity, these sounds cannot fail of being recognized if the examination be conducted with due care, and the child be living.

Death of the Fœtus in Utero.

In the treatment of the diseases of pregnancy, and especially of those affections capable of prematurely arresting the process of utero-gestation, it is always of importance first of all to determine whether the child be living or dead; the course of practice, to be pursued in the one case being, generally speaking, widely different from that necessary to be adopted in the other. From what has already been said, however, relating to the means to be employed for ascertaining its active existence, there can be but little difficulty in arriving at a satisfactory conclusion respecting its opposite condition. If the fœtal movements shall have been already felt by the patient, or ascertained to exist by the practitioner, the absence of these indications, after due examination has been made, will afford strong presumptive evidence that the child has ceased to live. In addition, the subsidence of the uterine tumour to the lowest part of the abdominal cavity; sense of unusual weight and coldness of this region; intermittent pains, attended with a feeling of bearing-down; flaccidity of the abdomen and of the breasts; shrinking of the whole surface; the occasional occurrence of rigors; escape of blood or of water *per vaginam*, &c., will materially assist in strengthening the grounds of suspicion. If the event happen in the earlier months of pregnancy, before quickening has taken place, the difficulty of arriving at a satisfactory conclusion will be much greater, as the employment of auscultation can lead to no result at this stage of the process. Very little aid is afforded either by the appearance of the *os uteri*, so long as the ovum

remains within the cavity of the uterus, except that the orifice will appear more collapsed on account of the absence of the gelatinous secretion; but after delivery, the cervix, when free from disease, soon subsides, and, in a short time, the orifice is again reduced to its fissured or linear form.

CHAPTER VI.

STATISTICS OF ABORTION.

Of the actual Duration of the Child-bearing Period.

The period of life during which the human female of this climate is said to be capable of bearing children is about thirty-two years, namely, from the age of fifteen and a half, at which period it was already shown the uterine functions are first awakened into a state of activity, to that of forty-seven and a half, when they again become quiescent. This is the average term of the activity of the menstrual function in this climate. But it is certain that the child-bearing aptitude does not really exist during the last five or six years of this term, as will appear from the following table, which exhibits the histories of thirty-eight women in reference to their last pregnancy, and the subsequent menstrual phenomena in the same individuals: —

Table VI.

Showing the Age at which the last Pregnancy terminated, and that at which Menstruation finally ceased, in thirty-eight married women; the Temperament, or Habit of Body; and the State of Health accompanying the last Menstrual Change, in each individual respectively.

No.	Age at termination of last pregnancy.	Age at the final cessation of the menses.	Temperament, or habit of body.	State of health at the last menstrual change.
1	23	24	Nervous-sanguine.	Favourable.
2	30	54	Strumous.	Unfavourable.
3	30	40	Bilious.	Unfavourable.
4	32	52½	Sang.-lymphatic.	Favourable.
5	35	50	Sanguine.	Unfavourable.
6	36½	37	Nervous-sanguine.	Favourable.
7	37	44	Lymph.-sanguine.	Favourable.
8	38	38	Sanguine-bilious.	Favourable.
9	39	50	Bilious.	Unfavourable.
10	40	46	Sanguine.	Favourable.
11	40	45	Strumous.	Unfavourable.
12	40	49	Bilious.	Unfavourable.
13	40	41	Bilious-sanguine.	Unfavourable.
14	41	45	Sanguine.	Unfavourable.
15	41	45	Lymphatic.	Favourable.
16	42	48	Sanguine.	Favourable.
17	42	46	Bilious.	Unfavourable.
18	42	51	Bilious.	Favourable.
19	42	66	Lymph.-sanguine.	Unfavourable.
20	43	48	Lymphatic.	Favourable.
21	43	51	Lymph.-sanguine.	Unfavourable.
22	43	48½	Lymph.-sanguine.	Unfavourable.
23	44	49	Bilious.	Favourable.
24	44	52¼	Bilious.	Favourable.
25	45	50	Sanguine.	Favourable.
26	45	51	Bilious.	Unfavourable.
27	45	48	Bilious.	Favourable.
28	45	48	Bilious.	Favourable.
29	45	47	Bilious.	Unfavourable.
30	46	47	Sanguine-bilious.	Favourable.
31	46	50	Sanguine-bilious.	Favourable.
32	46½	47	Bilious-sanguine.	Unfavourable.
33	47	52	Lymphatic.	Unfavourable.
34	47	47	Lymphatic.	Favourable.
35	47	48	Strumous.	Favourable.
36	47	50	Sanguine.	Favourable.
37	48	49	Sanguine.	Favourable.
38	49	52	Sanguine.	Favourable.

The sum of the ages of the individuals recorded in the preceding table, at the time of their last delivery, is 1586, giving an average of 41·73 years; the average age of the same individuals, at the time of their last menstruation, is 47·54 years; so that a period of nearly six years is here indicated, during which, although the menstrual function continued to be more or less efficiently discharged, and the health good, aptitude for procreation did not exist. They were all placed under equally favourable circumstances for the continuance of child-bearing, so far as regarded their matrimonial position.

A like period of uterine quiescence is observed before child-bearing begins. This, however, is not so much owing to want of fitness in the organs of generation to accomplish the end for which they are naturally designed; but rather to the custom which prevails among the higher and middle classes of society in this country, of discountenancing, as far as is practicable, early matrimonial alliances. It would be well if this wholesome example were more generally encouraged, or else controlled by some suitable interposition of the legislature. It is truly lamentable, to witness the immense amount of wretchedness and misery exhibited in the objects seeking relief at our public Institutions, resulting from this circumstance alone. Girls often become wives while they are yet but children, not only in years and in intellect, but absolutely before the change of pubescence has been accomplished; and, in some instances, before its near approach is announced by the usual physical indications.[1] In reference to the

[1] The preposterous custom alluded to in the text — the pernicious tendency of which is sufficiently obvious — is not the result of the factory, or of any other system peculiar to Manchester and towns of similar character, as some writers have alleged: it prevails, principally, among the poor Irish residents who form so large a proportion of the population of manufacturing districts. Marriages in the fifteenth and sixteenth years of age, are constantly taking place amongst them; not suddenly, and by stealth, as might be supposed; but

commencement of child-bearing, the following table exhibits the respective ages at which the first pregnancy occurred in 541 married women, natives of this country: conception

openly, deliberately, with the previous knowledge, if not with the approbation of the parents; and under the sanction of a solemn religious ceremony.

The future prospects of these "candidates for happiness," and of the generation immediately forthcoming, may be faintly shadowed out by taking a view of the state of moral and religious culture to which they have arrived at this important era of their lives. They have been trained up under the guidance of parents whose early lot was similarly cast with their own; and who, by the time their first-born is thus launched upon the world — not put out to learn a business, but married — have attained to the decent and discreet age of thirty to thirty-five years, having already a family of from six to ten or twelve children.

In nine cases, at least, out of every ten, neither party can read or write. The juvenile husband, if fortunate enough to be in employ, holds a precarious situation by which he probably earns from six to ten shillings per week, and the wife realizes perhaps six or eight shillings more. But want of employment does not deter them from entering into the bonds of wedlock, provided they can obtain sufficient money to pay the marriage fees. If employed, however, the young couple live in comparative luxury for some weeks, or months, until by sickness or other misfortune, or the contingencies of child-bearing, their supplies are cut off, and thus they become reduced at once to a state of pauperism.

Their household expenses are very trifling, and these discharged, the rest of their earnings is spent upon articles of daily consumption. Provision for the following day, or even for the following hour, never seems to form the subject of thought. They are content to lodge in the same cellar or garret with their parents and family, or with other parties; they share the same litter of straw or of shavings with other couples similarly circumstanced; they participate in the same domestic conveniences, the extent of which is somewhat singular and interesting. No furniture adorns the apartment where they live, beyond one or two chairs or stools, and a sort of table. There is a corresponding supply of culinary utensils: one or two knives and forks, one or two spoons;— for the purpose of glossological investigation, I have frequently been unable to procure a fragment of either, except from the house of a neighbour;— there is a very scanty supply of earthenware; and a single tin vessel is made to serve many purposes, besides that of cooking-pan.

In many instances, the floor of the room is never washed, or even swept; the fire-place is never cleansed; and the ashes remain unremoved, except when the fire will no longer burn. The walls are never white-washed. Some

having taken place, on the average, about two months and a half after marriage. The process was differently advanced in different individuals; the average period of the process

time ago I made particular enquiries upon this subject, of parties occupying several streets of houses in a district known by a name which indicates the origin of a great proportion of its inhabitants. Amongst them were individuals who had resided upon the property for a period of from twelve to twenty years, and not one could be found who remembered any of the houses being either whitewashed or painted. The walls and ceilings were worse than black, and stained by thousands of marks of slaughtered vermin which had been crushed with the finger, or pursued with the flame of a candle, as they crawled along upon the mortar. The stench in most of these places was pestilential and suffocating. A pig, not unfrequently, occupies a corner of the apartment where the inmates eat, and sleep, and cook their victuals.

The individual condition of these people is much in keeping with that of the places they inhabit. They are extremely inattentive to personal cleanliness. They seldom properly cleanse their skin, and perhaps never extend the process beyond the part immediately exposed to view. Their linen is worn for an indefinite period without changing or washing. I have frequently witnessed a garment worn, unchanged, until it has fallen from the person in tatters. During the disasters of sickness, and especially during the puerperal period, the articles of dress nearest the skin become absolutely putrid. The whole drapery about the bed is literally saturated with filth, and alive with vermin, which are suffered to crawl unmolested in numbers beneath the eye; and the emanations are overpowering.

In the economy of house-keeping their deficiency is most humiliating. What knowledge, indeed, can be expected to be possessed by a creature who has been employed from home since the age of eight or nine years, for twelve or fourteen hours daily, and has never even witnessed any of the processes of cooking beyond that of brewing a cup of tea, or boiling a potato. Their diet consists principally of dried fish, potatoes, and bread, and of expensive (comparatively expensive) ready-cooked articles procured from the shops. The meal is never set forth in order upon a table; but distributed immediately from the pan or the smouldering ashes, as it approaches a state of edibility; his share of the morsel being seized by each and consumed after his own fashion. Of the idea of "family circle" and "fire-side enjoyment," they are utterly unconscious. The meal, such as it is, being finished, an adjournment to the dram-shop is a very common practice; and the intoxicating liquor is often poured down the throats of children five or six years old.

They have no idea of the use of the loaf except while it is new, regarding it as useless or fit only for the pig when stale. Pieces of the finest bread consequently, are often seen scattered about the sick room in quantity sufficient to

at the time of the inquiry, was about the end of the sixth month: —

TABLE VII.

Age of Commencement of Child-bearing.

No. of Cases.	Age at time of first pregnancy.	No. of Cases.	Age at time of first pregnancy.
1	15½ years.	16	26 years.
9	16 years.	12	27 years.
14	17 years.	6	28 years.
33	18 years.	8	29 years.
64	19 years.	9	30 years.
76	20 years.	5	31 years.
85	21 years.	7	32 years.
76	22 years.	2	33 years.
41	23 years.	2	34 years.
48	24 years.	1	37 years.
25	25 years.	1	40 years.

The mean age of the individuals indicated in the preceding table, at the time the enquiry was instituted, was 22 years, or thereabouts; from this may be deducted half a year for the term to which the process had then arrived, leaving 21½ years as the average age at which child-bearing commenced.

It thus appears that the actual duration of the child-bearing

furnish one of the most suitable articles of diet that the invalid could desire, if only a little trouble were bestowed in preparing it. Arrow-root, sago, and other nutritious articles are occasionally supplied from some of the medical Institutions; but, in general, they lie neglected and untouched, and are ultimately thrown away for want of knowing how to prepare them for use. Yet is a demand being constantly made by the patient or those about her, for something nourishing; referring always to wine or spirituous liquors.

Those who are in the habit of coming frequently in contact with the lower orders of the Irish peasantry, cannot avoid the conviction that the origin of a vast proportion of the misery which prevails amongst them, both in this and their own country, may be directly referred to these very imprudent and unnaturally early marriages; to say nothing of the numerous instances of physical imperfection and mental decrepitude witnessed in the offspring of such unions.

period in the female of this climate, is about 20 years, namely, from the age of $21\frac{1}{2}$ to that of $41\frac{1}{2}$; and that a wife, placed under favourable circumstances, and in the enjoyment of health, may be expected to continue bearing children, at certain intervals, during the whole of this period.

Of the average number of Pregnancies and the proportion of Abortions occurring during the period of Child-bearing.

The number of pregnancies which each woman experiences, under the conditions stated in the preceding section, during the existence of her procreative aptitude, is about twelve, or one in every twenty months. This includes abortions, "false conceptions," so called, premature deliveries, and all having an unsuccessful issue, the average amount of which will be rather more than one and a half for each individual; or it may be stated as a general rule, that every seventh pregnancy has a premature termination. These conclusions have been drawn from the subjoined facts.

Two thousand married women in a state of pregnancy, admitted for treatment at the Manchester Lying-in Hospital during parts of the years 1845 and 1846, were interrogated in rotation respecting their existing condition and previous history. Their average age, at the time of the inquiry, was a small fraction below 30 years. The sum of their pregnancies, already terminated, was 8681, or 4·38 for each; of which, rather less than one in seven had terminated abortively. But as abortion occurs somewhat more frequently during the latter than in the first half of the child-bearing period, the real average will, consequently, be rather more than one in seven.

Of the individuals submitted to inquiry, 1253 had not then suffered abortion. The average age of these was 28·62 years; the sum of their pregnancies was 3906, or 3·11 for each person.

The remaining 747 had already aborted once at least, some

oftener. Their average age was 32·08 years. The sum of their pregnancies was 4775, or 6·37; that of their abortions 1222, or 1·63, for each person.

With a view of ascertaining what degree of uniformity was observed in the occurrence of these events at different periods of the inquiry, the whole were arranged in ten equal groups, occupying for their registration about ten months in succession. It may be stated that the number now produced does not include all the patients admitted for treatment at the Institution in question during the period alluded to, being only about two-thirds of the usual amount in a given time; for, a considerable number appeared to remember so very imperfectly the events of their previous life, that their accounts were judged altogether inadmissible in a record of this character.

Table VIII.

Giving an Abstract of the Histories of 2000 *Pregnant Women in reference to their Age, the number of Pregnancies, and proportion of Abortions already completed; arranged in groups of* 200 *each.*

	Women who had not aborted.				Women who had already aborted.					
	No.	Average age when admitted.	Sum of previous pregnancies.	No. of pregnancies for each person.	No.	Average age when admitted.	Sum of previous pregnancies.	No. of pregnancies for each person.	Sum of their abortions.	Average No. of abortions for each person.
1st 200	129	28·83 yrs.	321	2·48	71	30·71 yrs.	445	6·26	110	1·55
2nd 200	129	27·84 yrs.	376	2·91	71	31·92 yrs.	447	6·30	132	1·85
3rd 200	120	28·04 yrs.	377	3·14	80	32·38 yrs.	536	6·70	134	1·67
4th 200	135	28·71 yrs.	414	3·06	65	32·77 yrs.	441	6·78	106	1·63
5th 200	122	27·63 yrs.	390	3·20	78	31·43 yrs.	448	6·00	127	1·62
6th 200	129	28·65 yrs.	423	3·28	71	32·29 yrs.	413	5·81	107	1·50
7th 200	114	29·95 yrs.	471	4·13	86	31·51 yrs.	554	6·44	149	1·73
8th 200	119	29·07 yrs.	429	3·60	81	32·03 yrs.	517	6·38	116	1·55
9th 200	130	29·20 yrs.	331	2·54	70	32·88 yrs.	476	6·80	111	1·58
10th 200	136	28·29 yrs.	374	2·96	74	32·87 yrs.	481	6·50	130	1·75
Total 2000	1253	28·62 yrs.	3906	3·11	747	32·07 yrs.	4777	6·38	1222	1·63

From the preceding statements, it appears that more than thirty-seven out of every hundred mothers experience abor-

tion before they attain the age of thirty-years. This is, probably, rather under than above the real average, as a considerable proportion of them were the first time pregnant, having as yet all the difficulties and dangers of this eventful period of life to encounter; and all were, of course, liable to further similar misfortunes, as it was impossible to declare that the present should be the last pregnancy, even in those most advanced in years; or that the term in the existing instance should be fully accomplished. As the age, therefore, at which the above averages were made, is a year and a half below the *middle* of the child-bearing period, (which will happen as was already shown, at about 31½ years of age,) and on the supposition also that the proportion of unfavourable cases is as great in the latter as in the first half of the term, it must be presumed that the per centage of 37 will be found to be somewhat less than half the number which represents the actual amount of women, living and enjoying all the necessary advantages, who experience abortion during some part of the period. This is rendered still more probable by the facts — too limited perhaps to warrant a general conclusion, but bearing directly upon the subject nevertheless — that of 64 women who were living in wedlock until after the final menstrual crisis, only 8 had escaped having an unsuccessful pregnancy; the per centage of those who had aborted being 87.

It is popularly believed that early, especially first pregnancies, have more frequently a premature termination than those which come after. This does not accord with the results of my observations. I am inclined to believe that the third and fourth, and subsequent pregnancies, and one or two of the last,—those, namely, which occur near the termination of the fruitful period,—are most commonly unsuccessful. Two hundred and twenty-six of the individuals alluded to in the preceding table were the second time pregnant, of whom 20, or

8·8 per cent., had aborted of the first; and two hundred and thirty were the third time pregnant, of whom 58, or 25·20 per cent., had previously aborted.

Of the Period of Pregnancy at which a Premature Issue most frequently occurs.

Abortion, (which term is here used in its most extensive signification,) may take place at any period of utero-gestation. It is much more common, however, at some stages of the process than at others, and is attended with different degrees of danger, according to the circumstances under which it occurs; the nature of the exciting cause being amongst the most important. When it takes place before the end of the sixth month, it is invariably fatal to the offspring, either before birth, or in a short time after; and at any period before the completion of the process, it is more or less injurious to its well-being. Instances are on record, however, of children born during the early part of the seventh month, having lived in the enjoyment of tolerable health and constitutional vigour to a mature age. I am informed by an eminent professional friend, that in the case of his own daughter, gestation had barely arrived at the middle of the seventh month when she was born, and she lived to the age of ten years.

Abortion is, at all times, fraught with danger to the mother, and sometimes, attended with fatal consequences. I give in the following table, the respective periods of 602 cases of abortion, which have occurred under my own immediate observation. It may be noticed, that each figure in the first column embraces a period of four weeks, extending from a fortnight before, to the same length of time after the month indicated. And, as abortions happening earlier than the seventh week of uterine life, are so frequently and so nearly simulated, both in married and unmarried females, by certain uterine discharges the result of disordered menstruation; events said to have taken place at this early period — except

those wherein the escape of an ovum was undoubtedly proved, have not been included in the report.

TABLE IX.

Showing the period of pregnancy at which Abortion occurred in 602 cases, the relative number of still-born and living children, and the number living at the end of a month after birth.

Period of pregnancy at which abortion occurred.	Number of births at each period.	Number still-born.	Number living at birth.	Number living at the end of a month after birth.
2 months	35	—	—	—
3 months	275	—	—	—
4 months	147	—	—	—
5 months	30	—	—	—
6 months	32	24	8	0
7 months	55	38	17	3
8 months	28	23	5	1
Total	602	85	30	4

The fœtus of six months growth is generally considered viable. Of the eight indicated in the preceding table as having been alive when born at this period, seven perished within six hours after birth, and one only attained to the age of ten days. It appeared probable, from the calculations of the patient, that pregnancy in this last case had arrived beyond the period of six months.

Of the seventeen born alive at seven months, the majority lived over several days, and a few to the end of the third and fourth week. Three still survive, the youngest of whom is now aged nineteen months. Eleven of those born alive at seven months, and three of the five born alive at eight months, perished under disease of a specific nature, inherited from the mother.

In three of the foregoing instances, the event was attended with fatal consequences to the mother. One of these was a

case of *placenta prævia*, the delivery, which took place at seven months, having for several days been preceded by a constant and profuse hœmorrhage; one was a case of malignant degeneration of the uterus; and the third was a case of twins, at about seven months of their uterine growth. In the latter instance, delivery was immediately followed by an alarming prostration, which lasted several hours unmitigated. The patient then rallied slightly, but the uterus remained imperfectly contracted; there was no hœmorrhage or lochial discharge, nor any appearance of milk in the breasts. She died on the sixth day after delivery, with all the symptoms of uterine phlebitis, and of those indicating the presence of pus in the circulation.

I have neglected to note down accurately in a sufficient number of cases in this group, the amount of hœmorrhage and other alarming symptoms connected with these cases; in reference to which, therefore, no statistical account can at present be given. Hœmorrhage, however, is always most profuse in cases of *placenta prævia*. The discharge usually comes on suddenly, without previous warning, and is often in great abundance. This symptom is frequently met with, also, to an alarming extent, in abortions produced by accidental causes, especially those occurring during the middle and latter months of pregnancy.

The extreme frequency of these occurrences during the third and fourth months of fœtal life, would lead *a priori* to the suspicion that some condition, local or general, existed, eminently predisposing to diseased action at this particular period. The explanations given in the preceding chapter in reference to the altered anatomical relations of the uterus and adjacent viscera, and the consequent physiological changes during pregnancy, will serve, it is believed, to elucidate this point: their pathological developments will be more particularly examined hereafter.

CHAPTER VII.

CAUSES OF ABORTION.

The causes of abortion are, according to authors, exceedingly numerous; including almost every circumstance in life, however trivial, which happens in deviation from the ordinary quiet course of nature. They have been divided into *predisposing*, and *occasional* or *exciting* causes; and the French writers add another, which they call the *immediate* or *determining* cause; referring merely to the physiological agency of the uterus and parts associated with it, engaged in the separation and expulsion of its contents. Of the latter, I shall have nothing further to observe, as it is common to the parturient process at whatever period occurring.

By *predisposing causes*, are meant certain morbid conditions, local or constitutional, already in the system; or a particular susceptibility to morbid action during pregnancy, by the operation of which the process is liable to be prematurely arrested. They have been subdivided into two orders: those, namely, which originate entirely in the maternal system; and those which appear to depend upon some defect in the product of gestation. Of the first kind are, diseased states of the uterus, including all the morbid conditions of which the organ is susceptible, as tubercular formations; polypous and fibrous growths; hydatids; dropsy; rigidity of the uterine fibres;

abundant leucorrhœal discharges; dropsy of the amnion; accumulation of fluid between this membrane and the chorion; plurality of *ova;* and disease of the uterine appendages: also, certain constitutional conditions, as plethora; cachexy; morbid irritability; the hœmorrhagic, scorbutic, or scrofulous diathesis; and certain transmitted peculiarities. Some particular states of the atmosphere seem to create, for a time, an inaptitude for the accomplishment of utero-gestation; the more frequent occurrence of abortion, at some seasons than at others, giving it an epidemic character. This is undoubtedly the case in regard to some forms of disease incidental to the puerperal period, of which many remarkable examples might be furnished out of the events of the last few years.

Disease or malformation of the *ovum* or its appendages, and morbid organic changes of the placenta, said frequently to exist as causes of abortion, are so constantly associated with disease of the maternal organs, as to lead to the suspicion that the mischief in a great majority, if not in all instances, originates in the latter. In my own practice, such complication has been almost invariably found in those cases wherein I have had an opportunity of making the necessary examination. I can state, without hesitation, that in five out of every six instances of what are denominated "blighted ova," disorganized placenta, and hypertrophy or other abnormal condition of the membranes, organic disease of the uterus has been met with; and this, on enquiry, was generally proved to have existed at a period anterior to that from which the defect discovered in the aborted organs could reasonably date its commencement. There appears to be no reason for doubting, that not only disease of the product of conception, but also arrest of development, and consequent organic deficiency or malformation, are the direct result of a faulty condition of the organ or of the constitution upon which its growth and existence depend, and not the effect of any inherent imperfection, or of merely fortuitous causes.

Among accidental causes of abortion, the most common are, violent mental emotion, as excessive grief, joy, fear, anxiety, anger, and the like; falls, blows, bruises, severe efforts, sudden movements of the body, as running, dancing, jumping; hysteric convulsions, epileptic fits, or severe pain; immoderate laughter, crying, coughing, vomiting, dysentery, diarrhœa; the use of strong purgative, emmenagogue, or mercurial medicines; the shock of the shower-bath, the hot foot-bath, copious bleeding; tight lacing, or any other inconvenience arising from dress; and whatever has a tendency to disturb the equilibrium of the circulation, or derange the balance of the nervous system. Sometimes, however, injuries of the most serious description, received during pregnancy, are recovered from without in any way disturbing the process. In February, 1846, a poor woman in the eighth month of pregnancy, was admitted a home-patient of the Lying-in Hospital, having been recently discharged from the Royal Infirmary, where she had been nine weeks an inmate for fracture of the skull, caused by a blow from a hatchet which she received in a quarrel in the preceding November. She was delivered at the end of March, of a healthy child, at the full term of utero-gestation. Numerous cases of similar character are elsewhere on record.

And although the action of cathartic, and what are commonly denominated emmenagogue medicines, may sometimes be followed by abortion, I believe such to be a very unusual occurrence, except some powerful predisposing cause was already prevailing. The most alarming symptoms are sometimes induced by the use of the bitter apple, savin, rue, fox-glove, and other drugs, administered with criminal intention, without in the least degree disturbing the function of the uterus during pregnancy. Even the ergot of rye, which has certainly appeared, on some occasions, to exert a powerful effect upon the contractile fibres of the uterus, has also so frequently failed

when given with a particular view to this end, that its specific power is now, by many practitioners, considered doubtful. In a case under my care, of pregnancy in a woman with extreme deformity of the pelvis, wherein it was considered advisable to procure abortion in the fifth month of the process, the ergot alone was employed, and, at first, with the desired effect. It was given in three successive pregnancies, and in each instance labour pains came on after eight or ten doses had been administered, and expulsion was effected by the end of the third day. It was perseveringly tried in a fourth pregnancy in the same individual, and failed completely.

Causes upon which Abortion appeared to depend, in cases having occurred under my own observation.

I questioned 2000 women on their admission as patients of the Manchester Lying-in Hospital, as to their previous history in reference especially to their unsuccessful pregnancies, and the causes assigned by them and their medical attendants for the misfortune in each instance. Of this number, 747 had already aborted once at least; to some, the event had occurred several times. The sum of their abortions was 1222. The following are the causes to which they had been attributed: —

"Inward weakness," impaired state of the health generally, and acute disease.....	911
Accidents, mental perturbation, &c.....	222
No assignable cause.....	90
	1222

In interrogating poor, uneducated women, respecting their personal history, great caution must necessarily be exercised to avoid being led into error. They are so regardless of essential particulars, so liable to forget events as they really occurred, and have such an irresistible propensity to amplify upon

any topic relating to their own sufferings, that their statements must, at all times, be received with a degree of limitation. At the same time, the expressions which they commonly employ are often strikingly graphic and significant, and if allowed to flow freely, unlarded by attempts at refinement of speech, their meaning is clearly and forcibly conveyed in a few words. Thus, "inward weakness," which is sometimes also denominated a "waste," refers always to a light-coloured vaginal discharge unconnected with menstruation; and, doubtless, either of these terms conveys a far more comprehensive idea of the patient's feelings, and the impaired state of health with which the complaint in question is, for the most part, associated, than that afforded by the more technical phrases of *leucorrhœa*, *fluor albus*, or the *whites*. The poor people are also in the habit of noticing a distinct variety of the whites, known by the appearance of the discharge, which they emphatically designate the "yellows," correctly regarding it as a more serious form of the malady. But their reports alone were not trusted to in the statements which follow.

On a former occasion, whilst employed upon a course of inquiry of the present character,[1] I was frequently struck with the constancy with which leucorrhœal affections existed previous to the occurrence of abortion, and that the discharge was invariably accompanied by a certain, well-marked train of local and constitutional disturbances, and sometimes with evidence of disease of specific character. On submitting these cases to specular examination, the source of the discharge and the cause of suffering appeared to be at once revealed; disease of the lower part of the uterus being found

[1] The inquiry here alluded to, was extended to upwards of a thousand of the earlier cases forming the subjects of investigation concerning the history of menstruation; but, on account of the incomplete and unconnected state of that portion of the records which has especial reference to this part of the subject, they were judged unsuitable for statistical purposes, and were consequently set aside on commencing the present series.

to exist in almost every instance. That this lesion of structure constitutes the true pathologieal seat of leucorrhœa and of all its assoeiated phenomena, as well as a very frequent cause of disastrous events during pregnancy, is further eorroborated by the benefieial effect of the treatment adopted, when this was espeeially direeted to the uterine affeetion. The following eases of abortion, examined prineipally with a view to obtain a eorreet statistieal average of the prevailing causes thereof, oeeurred in immediate suecession; a eareful investigation having been instituted in eaeh instanee.

TABLE X.

Causes of, and conditions associated with Abortion, in 378 *cases.*

Accidental agencies.	Placenta prœvia.	Constipation of the bowels.	Retroversion of the uterus.	Incurable disease.	Vascular congestion.	Disease of the lower part of the uterus.	Obscure causes.
44	8	3	3	1	15	275	29

The eases indieated in the first five divisions of the preeeding table I shall dispose of as briefly as possible, and proeeed, immediately afterwards, to the eonsideration of those more espeeially eonneeted with a diseased eondition of the uterus.

Abortion immediately ensuing upon disturbance of the proeess of utero-gestation from *accidental violence,* is seldom brought under the notiee of the medieal man for the purposes of treatment, unless the injury inflieted be severe, and of a eomplicated nature; delivery being usually affected shortly after the applieation of the cause, and reeovery being left to Nature and the patient's own management. The possibility of internal organie lesion resulting therefrom, and its injurious effects upon the health prospectively, or upon future

pregnancies, is altogether disregarded. In some of the cases attributed to these agencies, the exciting cause was of a very trivial description, and far less in degree than many women are known to bear with impunity. All those above recorded under this head, however, were previously free from vaginal discharge of any kind, which symptom I have taken as being, more certainly than any other, indicative of structural disease of the uterus. A few, whose recovery was protracted, and for a length of time incomplete, had leucorrhœal discharge after the lochia had ceased; in a number of these the uterus was examined with the speculum, of whom three had fissured ulceration of the labia, two had the cervix indurated, with excoriation of the surfaces, and in two others a slighter form of granulating sore was present. It is probable that, in some of these, the disease existed previous to the occurrence of abortion.

The majority of the above cases happened in women whose occupation necessitated a peculiar kind of bodily exertion; many being assistants to spinners, who are constantly obliged to use straining efforts to reach forward over the advancing machine; others were power-loom weavers; and a number were hawkers and market women, who are in the habit of raising and carrying heavy burthens.

Placenta Prævia.

When the placenta happens to be implanted with its centre over the *os uteri*, abortion is inevitable; and this almost invariably takes place before the end of the fifth month. When only a small portion of it extends across the lower orifice, gestation may proceed to the seventh or eighth month, or even to the full period, without producing any great amount of danger to the process; but always, under such circumstances, separation takes place to some extent as the cervix expands, although premature expulsion is not an

inevitable consequence. The following case will show, that partial separation of the placenta from the walls of the uterus, attended at the time by effusion of blood from the ruptured vessels, is not always productive of irreparable mischief.

Case XXVI.

Implantation of Placenta over the Os Uteri; its partial separation, attended with hæmorrhage, before quickening; Result, favourable.

I visited a lady on the 4th of February, 1846, four months advanced in her fifth pregnancy. She was of a full habit of body, and had previously enjoyed good health. Half an hour before my arrival, she had been suddenly seized, after taking a hurried walk, with uterine hœmorrhage, attended by a sense of fulness and intermitting pains of the back similar to those of labour. The orifice of the uterus was closed; the labia soft and tumid, but not diseased; the cervix was elongated and unoccupied; and the body of the uterus large, expanded and heavy, communicating the sense of *ballottement* when raised upon the finger. The placental *soufle* was distinct, but the fœtal pulsation could not be heard in any part of the abdomen. Twelve ounces of blood were immediately abstracted from the arm, by means of which instantaneous relief was afforded, both the pains and the hœmorrhage ceasing simultaneously. She was ordered to keep the recumbent posture, and restricted to a farinaceous diet. Six grains of camphor combined with four grains of extract of hyosciamus were given at bed-time.

On the following day, she was free from hœmorrhage and pain; but a sense of fulness of the abdomen being still complained of, ten leeches were applied to the hypogastrium. The dose of camphor and hyoscíamus was repeated at intervals, and this had the effect of keeping the system perfectly tranquil; and on the third day, an aperient was found necessary.

The uterine bleeding did not return after the first day of the treatment; and by continuing the remedies, and observing still the above-mentioned precautions respecting diet and the recumbent posture, recovery was complete in seven or eight days. She was delivered of a fine healthy child of full growth, on the 2nd of July. About a fourth or a third part of the placenta was thin, shrivelled, and condensed, being smooth on both surfaces, and having its cellular arrangement obliterated. There can be no doubt that this portion of the organ, which protruded from the *os* at the beginning of labour, had been originally attached over the orifice, and that its removal therefrom took place on the occasion of the hœmorrhage, five months before delivery.

Functional Impediment of the Bowels.

A very frequent cause of complaint met with in the early months of pregnancy, arises from irregularity in the action of the bowels. The symptoms are, distension and tenderness of the abdomen, commonly attributed by the patients to flatulence, of which they are constantly endeavouring to relieve themselves by eructation. The abdomen is sometimes as large, under these circumstance, in the middle, as it should be at the end of pregnancy. There is a constant inclination to relieve the bowels; the evacuations, which are thin and scanty, being accompanied by violent straining efforts; this action is not long of being extended to the uterus, which becomes affected with pains of an intermittent and expulsive character, creating the belief that abortion is about to happen. The real cause of these disturbances, is accumulation of fœces in the third turn of the colon, accompanied with flatulent distension of the portion of bowel immediately above the seat of obstruction: the mischief originates in the following manner: —

During the fourth month of pregnancy, the uterus acquires

a size sufficiently large to occupy completely the cavity of the true pelvis, and exercises, while in this situation, an unwonted and constantly increasing pressure upon all the surrounding viscera. The rectum especially, is liable to suffer from this mechanical impediment. At first, the efforts to evacuate the bowel are ineffectual, a portion of the mass prepared for expulsion, being detained on each occasion, above the seat of pressure, and the accumulation is daily augmented. The more liquid parts of this are soon removed, partly by absorption, and partly by escape downwards; the rest becoming dry and indurated, and immovable by the ordinary functional agency. Accumulations sometimes take place in this manner to an incredible amount. I attended a poor woman named Hesketh, the wife of the janitor of one of our medical schools, in whose case the quantity of hardened fœces discharged from the bowels, in the course of three or four days, must have amounted to fifteen or twenty pounds in weight. She was in the fourth month of pregnancy, and the abdomen was as large then as it is usually found to be at the end of pregnancy. The tumour was at first believed to be diseased ovarium, its surface being distinctly lobulated, hard, tender on pressure, and slightly moveable. Miscarriage happened before the bowels could be perfectly relieved.

The character of the evacuations in these cases, generally speaking, is fœculent, of a thin consistence, and is sometimes largely mixed with mucus, furnished by the lower, unoccupied part of the rectum; and sometimes with blood in variable quantity, which the efforts of straining cause to be exuded from the mucous surface near the anus. The nervous system becomes irritable and excited, the circulation quickened, the secretions throughout the body vitiated, and all the symptoms of dysentery, accompanied with a most distressing *tenesmus*, are speedily developed. While the excited state of the circulation, and the violent action of the expulsive mus-

eles, thus determine an inereased quantity of blood towards the uterine system, its free return towards the eentre of the body is effectually opposed by the surrounding pressure, inducing a eongested state of the uterine veins, the inevitable result of which is abortion, unless speedily relieved. The hœmorrhage aeeompanying this description of eases, is often alarmingly profuse, and restrained with difficulty. If disease of the *cervix uteri* be a concomitant of these eonditions, the cireulating current will be preternaturally directed towards this part of the organ, and the danger of abortion be thereby materially increased.

Retroversion of the Uterus

sometimes occasions abortion. It is, perhaps, more frequently met with than is indieated in Table X., but it is not in every ease followed by unfavourable results. It generally occurs before the period of quickening; but it may happen also under other cireumstances besides those of pregnaney; as when the uterus is enlarged by disease, or even when only of the normal size, and unoccupied by the produet of eoneeption. It is almost invariably oceasioned by fœculent aeeumulation in the upper part of the rectum, or the sigmoid flexure of the eolon, as described in the preceding paragraph. The violent efforts made to propel the hardened mass of fœees downwards, cause the latter to impinge against the fundus of the uterus, which is thus earried before it into the lower and baek part of the pelvis. The organ, by this foreible ehange of position, is doubled upon itself; its fundus is lodged in the hollow of the saerum, while its lower extremity is tilted upwards and firmly pressed against the areh of the pubis, implieating the neck of the bladder and continuous part of the urethra.

The first indication of the existence of retroversion, is inability to void the urine. If the displacement oecur suddenly,

and the retention of urine be at once complete, the suffering therefrom is of the most aeute kind, requiring immediate assistanee for its relief. It may happen, however, that the neeessary aid cannot be obtained during the first stage of the complaint, when, after a time, the pain suddenly eeases, and the patient no longer experiences any urgent inconvenience. This change, which is always an unfavourable omen, takes place on oecasions when the *detrusor* musele of the bladder has lost its tonie resistanee from over distension. The results are, temporary or permanent loss of its funetional power, and sometimes sloughing of the bladder; and this is generally followed by a speedy and fatal issue. Of this kind of disaster, however, I have not met with an instance. Miscarriage occurring under such circumstanees, is the immediate result of congestion of the uterine veins, caused by the firm impaction of the pelvic viscera within the unyielding boundaries of the cavity, by which an insurmountable obstacle is opposed to the circulating current through these parts.

Congestion of the Uterine Circulation.

Plethora of the uterine vessels not unfrequently exists during pregnancy, independently of mechanical impediment. According to the last Table, it appears to prevail as the immediate cause of abortion, in one out of every twenty-five cases; although I am inelined to believe that its real average is somewhat greater. Those in whom the venous capillary function is naturally below par, indieating predisposition to loeal congestion, are most frequently the subjeets of it. The symptoms, whieh usually manifest themselves after the period of quickening, from the end of the fourth to the eighth month of pregnaney, are, immoderate and painful distension of the abdomen, generally attributed by the patients to aceumulation of wind in the bowels; a pulsatile movement extending over the whole cavity, the beats being synchronous with the

heart's action; sense of weight and bearing-down; intermittent pains of the loins, like those of labour; and, occasionally, escape of blood from the vagina. There is also distension of the pudic, spermatic, hœmorrhoidal, and all the pelvic veins, and sometimes of those of the lower extremities. On examination, the vagina is found hot and turgid, and the cervix uteri tumid and varicose. When this state is allowed to exist for a length of time, local phlebitis may take place, resulting in varicose ulceration of the cervix; or the inflammation may become extended throughout the entire organ, and eventually to the uterine *peritoneum*, being followed by inflammation of this structure and consequent effusion into the abdominal cavity. The following cases will serve to illustrate this form of disease: —

Case XXVII.

Abortion in six successive pregnancies; a favourable issue obtained by means of remedial measures in the seventh.

Mrs. D., aged thirty-six years, of the bilious-lymphatic temperament, has been occasionally the subject of dyspeptic and hœmorrhoidal affections. Her first child was still-born in the eighth month of utero-gestation, in April, 1832. The labour was protracted, although the child was not large, nor the dimensions of the pelvis below the normal standard. She had considerable flooding during labour; her recovery was tedious, and not perfect in less than four months afterwards. Her second pregnancy terminated in an abortion, at the end of the sixth month; her third, at the end of the sixth month; her fourth, at the end of the fifth month; and her fifth, soon after quickening, in the summer of 1838. Each of these abortions had been preceded by distension of the abdomen, pain of the loins, piles, swelling of the *labia pudendi*, throbbing of the hypogastrium, and convulsive struggles of the *fœtus in utero*. Hitherto, the patient had resided in a healthy district

of North Cheshire, and was provided with every comfort that competent circumstances and able medical assistance could afford.

She took up her abode in Manchester in the year 1839; and I first saw her when she was in the sixth month of her sixth pregnancy, expressing herself extremely anxious that another unfavourable issue should be avoided. She had enjoyed exeellent health during the whole period until the time of her applieation, when she began to faney that the unfortunate crisis was again at hand, having already experienced throbbing and distension of the abdomen, with other threatening indications. I aseertained that she had never had a leucorrhœal discharge. The bowels were sluggish. No medicines were preseribed at this period, exeept an oeeasional dose of castor oil. The neeessity of maintaining both mind and body in a state of tranquillity and repose was urgently represented; and the recumbent posture was ordered to be maintained, for the present, as mueh as was practicable. These injunctions were, however, far from being faithfully obeyed. Three or four days afterwards, the well-known train of symptoms eame on in the usual form, and all hope of saving the ehild was soon abandoned. I did not see her, however, until seven days after the first interview; my attendance being at this time requested for the purpose of rendering the assistance usually required of the medieal attendant during parturition. The fœtal movements had not been felt for more than thirty hours; the pains had been for some time aetive, and continued to be repeated at intervals of a few minutes; but there had been no vaginal diseharge of any kind, nor did the pains appear to arise from contraction of the uterine fibres, so far as eould be aseertained by the hand placed upon the abdomen during one of the paroxysms. The patient felt confident, however, that the ehild had perished; and its expulsion, consequently, was hourly looked for.

Upon auscultatory examination of the abdomen, the fœtal pulsation could nowhere be detected; but the plaeental *bruit* was distinctly audible, and the fœtus was consequently pronounced to be still living. The *labia externa* were greatly swollen and irregular, the whole appearing as one mass of distended, knotty veins, some points of which were inflamed and painful; the vagina was hot, much corrugated, and evidently in a similar state of varicosis; the *os uteri* was closed, the lower part of the cervix still unexpanded, the whole being in a state of vascular hypertrophy. The venous congestion appeared to be strictly confined to the parts about the pelvis; the limbs being quite free from both congestion and œdema.

The treatment consisted in the rapid abstraction of twelve ounces of blood from the arm; repose in the recumbent posture; and the administration of an anodyne consisting of six grains of camphor combined with four grains of extract of hyoscíamus, every eight hours. The active movements of the child were felt in less than half an hour after the bleeding. On the following day she expressed herself perfectly well; the fœtal movements were as lively as usual; the double *battement* was sufficiently audible, numbering 146 beats in the minute, those of the plaeental current and of the maternal pulse being at the same time 86; there had been no recurrence of pain since the venesection; and the sense of abdominal weight and fulness was no longer present. A mild saline aperient was ordered to be taken twice daily; this, together with the pills before mentioned, was continued five or six days, when medicines were judged no longer necessary.

From this period, the patient continued perfectly well until the 30th of the same month, — twenty-two days after the date of the bleeding — at which period I found her labouring under exactly the same train of symptoms as above-described.

The fœtal movements had ceased; the abdomen was tumid, painful, and pulsating; and intermittent pains were present. The placental *bruit* was audible, but the sound of the fœtal heart could not be heard. The whole of the symptoms were perfectly relieved by depletion and the administration of anodynes as before, and in a few days she was restored again to health.

On the 19th of the following month, twenty days after the date of the second, and six weeks from that of the first bleeding, she was a third time threatened with labour. The whole train of symptoms reappeared as on the previous occasions. I found the vagina in a precisely similar condition to that first described; but the uterus was lower, and its cervix shortened and expanded. There was no inflammation of the latter, which was quite free also from abrasion, although visibly traversed by distended veins. Bleeding and anodynes were again practised, and the like beneficial results obtained. She was delivered on the 7th of October, two months from the date of the first bleeding, of a well-grown but still-born child, apparently about a fortnight before the completion of the term. It ceased to move the day previous to delivery. The patient left her bed-room at the end of three weeks, and afterwards enjoyed good health.

On the 20th of December, 1840, Mrs. D., again requested my services. She was five months advanced in her *seventh* pregnancy, having quickened two or three weeks previously; and was suffering under exactly the same train of symptoms as above enumerated, namely, pain of an intermitting character around the lower part of the body; cessation of the fœtal movements; distension and throbbing of the abdomen; bearing-down, &c. The state of the parts was no way different from that which has been already described. The same treatment was had recourse to, and similar results were obtained. On the 23rd of February, 1841, when advanced to the end of

the seventh month, a recurrence of the old tale of troubles induced the employment of depletory and anodyne measures, and with equally favourable results as formerly. From this period, she continued well until the 16th of April — four months after the first attack — on which day she was delivered, at the full period of gestation, of a plump, healthy female child. The labour was speedy and no way difficult; she recovered without an unfavourable symptom.

Mrs. D., was again delivered of a full-grown, living male child, on the 15th of September, 1843; and a third time, with equal success, on the 13th of November, 1845. In both these instances, similar difficulties arose as on former occasions; the disturbance beginning, in the first case, before the occurrence of quickening, and being accompanied with a very troublesome irritation of the bladder, and micturition, without displacement of the uterus. Depletion was practised on this occasion by means of leeches to the hypogastrium, and, in three days afterwards, to the sacrum. The soothing remedies were also administered, and the state of the bowels carefully attended to. In the seventh month of the same pregnancy, the threatenings of premature delivery, which appeared with the usual degree of severity, were perfectly relieved by the local bleeding which a sudden and most violent attack of piles rendered urgently necessary. The hæmorrhoidal tumours, which were external, formed a mass equal in size to a cluster of five or six large grapes, and were extremely painful. It is somewhat singular that this affection remained unrelieved by bleeding — whether from the tumours or their vicinity, or from remote parts of the body, the application of lotions and fomentations, or the administration of medicines, for nearly three weeks. The suffering was sometimes mitigated for two or three hours at a time, by means of full doses of morphia; but the pain invariably returned. At length, a solution of nitrate of silver was applied

in form of lotion; and the effect of this remedy was so complete and instantaneous, that, as I was afterwards informed, the question of my integrity became a matter of serious discussion among the patient's friends, who inquired, naturally enough, why this means had not been earlier adopted. The pain of the parts entirely ceased in a few hours after the application was first made; and on the second day, the tumours were shrivelled and callous.

The application of nitrate of silver in the above form has since been extensively used in my practice, in cases of painful phlebitic affections, with the most gratifying results. In congestion and inflammation of the lower uterine and of the vaginal veins, its soothing influence is often remarkable; the sympathetic pain of the loins and abdomen becoming, in many cases, instantly abated; the parts reduced in size, the circulation equalized, and the indications for blood-letting ceasing to appear. An auxiliary of great importance will be found also in the exhibition, for several nights in succession, at bed-time, of a full dose of morphine, opium, or hyosciamus, with camphor; and of a cooling saline aperient during the day. If hœmorrhage should come on, bleeding from the arm, or by leeches or cupping from the hypogastrium or loins, must by no means be delayed; unless contra-indicated by constitutional debility, or by a manifest impression upon the pulse, through previous evacuation. In regard to the extent to which these measures may be safely pursued, much will depend upon the condition of the *fœtus in utero*. The object is, to save the child, if living, and at the same time to secure the mother from danger. To this end, depletion may be properly repeated at longer or shorter intervals, and in suitable quantity, so long as positive evidence of local or general plethora exists; and the employment of the nitrate of silver, of leeches, scarification, or other applications to the *cervix uteri*, and the administration of anodynes, will be regulated according to the

effect produced. But if there appears to be satisfactory evidence that the child has ceased to live, its expulsion from the womb becomes a desirable object; and this should be promoted by such means as may be safely and efficiently administered.

Premature separation of a portion of the *ovum*, even when only to a very limited extent, is almost invariably attended by extravasation of blood from the uterus, and is followed, in most instances, by complete arrest of the process of gestation. On this account, the appearance of uterine hæmorrhage during pregnancy has come to be regarded as a sure indication that the ovum has perished; and under such impression, means are often adopted to facilitate separation and expulsion on occasions when the integrity of the ovum is, in reality, still undisturbed, the hæmorrhage arising from a totally different source. Instances of this kind are of frequent occurrence, some of which were adduced in the last chapter. The following cases will serve to show in what manner a mistaken idea of their real nature may lead to disastrous results: —

Case XXVIII.

Six successive pregnancies terminating about the end of the sixth month of the process from uterine congestion, each being preceded by hæmorrhage; a favourable issue obtained in the seventh, the symptoms, which were equally severe in this as on the previous occasions, being subdued by remedial interference.

M. A. Leman, a stout, active woman, of the lymphatic-bilious temperament, was married at the age of twenty-two years, having previously enjoyed good health. The menstrual discharges had hitherto been regular and abundant, and she had always been free from leucorrhœa. Her first pregnancy terminated seven weeks before the full term; the child, who

was born alive, was puny, and died emaciated, at the age of five months. From the period of quickening of her second pregnancy, she complained of languor and drowsiness, with unusual distension and uneasiness of the abdomen. When arrived at the end of the sixth month of the process, having for several days experienced a sense of weight and distension of the belly, accompanied with a perceptible pulsation which extended throughout the whole tumour, she was seized with pain of the loins and hypogastrium of an intermittent character, and the child sunk low down, and ceased to move. On the following day, uterine hœmorrhage came on, and continued for four days, when it became alarmingly increased, accompanied by decided labour pains, soon after which a dead fœtus was expelled. The lochial discharge was abundant, and ceased at the end of three days: she recovered favourably. Her third, fourth, fifth and sixth pregnancies were equally unfortunate; each was preceded by a similar train of symptoms, the hœmorrhage appearing three or four days before delivery in each case. It was in the last of these that my assistance was solicited. Labour pains were strong and frequent when I arrived, and delivery was effected in the course of half an hour afterwards. The child was about six months grown, and appeared to have died recently. The placenta, which I had occasion to remove with the hand, was large and greatly congested; but seemed otherwise healthy. She recovered favourably. This case had been preceded by a similar train of symptoms as on the previous occasions, hœmorrhage having come on three days before delivery. No cause could be assigned by the patient for these untimely occurrences.

I saw the same patient on the 11th of February, 1845, when in the sixth month of her *seventh* pregnancy. For several days previously she had experienced a sense of fulness, weight, and throbbing of the abdomen, attended with bearing-down pains; and on the morning of the day in question, a discharge

of blood had commenced while she was in the act of getting out of bed. On my arrival at noon, the hæmorrhage, which was still unabated, appeared to have been considerable, from the number of articles produced which were more or less saturated with blood. The lower extremities were varicose and œdematous; the external and internal vaginal veins congested. The *cervix uteri* was unusually tumid and elongated, and traversed by a number of raised, tortuous veins.

The child had not been felt to move, by the patient, since the previous day, and was believed, consequently, to have perished. These were the indications which had induced the practitioner, who was in attendance on three of the former occasions, to administer medicines with a view of arresting the hæmorrhage and of forwarding the process of labour. The remedy employed was, doubtless, the ergot of rye, as it was described as being a grey powder, mixed with a small quantity of warm water, of which she took several doses.

By the aid of the stethescope, the placental pulse was found to be peculiarly distinct, and could be heard over every part of the abdomen; the action of the fœtal heart was also faintly audible, its double beats numbering 126 in the minute: the maternal pulsations amounted to 94 in the same space of time. These indications being considered sufficient to justify an attempt to prolong the process, venesection was immediately practised. The blood was drawn from the median basilic vein through a large orifice; but the flow was arrested by the occurrence of syncope before ten ounces had been obtained. Two grains of opium, in the solid form, were administered immediately afterwards.

I saw the patient early the following morning. She had slept soundly; not a single attack of pain had occurred, nor was she aware that any escape of blood had taken place since my visit on the previous day. On removing the linen, however, which had been applied soon after the operation, a recent

stain was perceived, and a specular inquiry was forthwith practised. The turgescence of the external parts was considerably reduced; the cervix also was much less tumid, although the anterior labium was still sufficiently large to occupy entirely the upper orifice of the instrument. On endeavouring to bring into view the posterior *labium* and *os uteri*, which had hitherto been obscured by the tumefaction already noticed, the back part of the anterior lip presented a broken surface, which had not been before observed. Its extent was equal to that of a sixpence, and it had the appearance of a phlebitic ulcer. A stream of blood escaped from it into the speculum during examination, and this was repeated as often as the part was cleared by means of lint. No fluid whatever escaped from the *os uteri*. The solid nitrate of silver was freely applied to this open surface, and the strong solution of the same material was painted over the adjoining parts. The struggles of the fœtus had been repeatedly felt by the patient during the past night; the double *battement* was clear, numbering 148 in the minute; the placental pulse being, at the same time, 84. The patient's condition was every way improved; but as a sense of fulness and weight of the belly still remained, and also on account of the slight reappearance of the hœmorrhage just named, six leeches were applied to the hypogastrium; two grains of opium were again ordered to be given at bed-time; and repose, in the recumbent posture, was strictly enjoined.

From this period, the patient progressed favourably. No accession of pain, abdominal uneasiness, or hœmorrhage reappeared; and she was able to attend to her domestic duties with comfort, at the end of ten days. The fœtal movements continued to be free and vigorous. A leucorrhœal discharge of muco-purulent appearance, came on, for which the nitrate of silver was twice more applied. The opiate was not repeated; but it was, nevertheless, thought prudent to administer a

full dose of camphor with hyosciamus, at night, for a length of time, and a saline or castor oil aperient occasionally.

About the end of the eighth month of pregnancy, eight leeches were again applied to the hypogastrium, in consequence of a recurrence of unusual weight and distension of this part, accompanied with a sense of bearing-down, and slight derangement of the urinary function. The relief was instantaneous; and she experienced no further inconvenience during the rest of the term. She was delivered on the 17th of May, of a living, full-grown, male child. Her recovery was favourable.

Abortions happening under the conditions now described, take place more frequently after, than before the period of quickening. Two circumstances contribute to increase this tendency as pregnancy advances. Thus, the pressure exerted upon the lower part of the *body* of the uterus by the weight and distending force of the growing ovum, on the one hand, and by the resistance of the hard brim of the pelvic cavity, upon which the body of the uterus frequently rests, on the other, opposes a very effective impediment to the free return of blood through the veins, and is a common cause of congestion and phlebitic disease about the cervix and lower part of the organ. Obstruction also, of the hœmorrhoidal, spermatic, iliac, and external pelvic veins, and a varicose state of the lower extremities, are occasioned by pressure of the gravid uterus upon parts situated near the upper aperture of the pelvis; and these conditions, for reasons of a physiological nature, are more liable to occur after the uterus has become located in the abdomen, than before its ascent took place. In some subjects, however, a similar state of things is met with while the organ is still comparatively small and low down, and gestation may be seriously endangered thereby at an early period of the process, as in the following instance: —

Case XXIX.

Local uterine phlebitis with hæmorrhage, in the fourth month of pregnancy. Threatened abortion. Issue, successful.

Ellen Dillon, aged twenty-six, requested my assistance on the 9th of May, 1844, being in the fourth month of her third pregnancy. Her previous pregnancy terminated at the end of the sixth month, under circumstances similar to the present. It was stated that she had been suddenly seized, whilst in pursuance of her household avocations, with pain of the loins and abdomen, of an intermitting and forcing down character, similar to that of labour, accompanied with discharge of blood from the vagina, which, on my arrival, was considerable in quantity. For some weeks past, she had suffered from piles, with occasional escape of blood from the anus. The veins of the lower extremities, and the external pudic veins, were greatly distended, being, in some places, inflamed and painful. The abdomen was distended and tender, but no uterine tumour could be detected. No sound was elicited on inquiry with the stethoscope. The mammæ exhibited the usual indications of pregnancy. She had not felt the fœtal movements, but believed herself to have arrived near the end of the fourth month. The vaginal membrane was hot, turgid, and communicated a pulsatory impression on every side; the lower extremity of the uterus was tumid; the os uteri slightly dilated, its boundaries soft and irregular. On specular examination, the anterior labium occupied entirely the upper aperture of the instrument, being of a dark-red colour, and visibly congested. At its most dependent part was a depressed orifice the size of a split pea, whence a stream of blood issued freely into the speculum. This depression had a smooth but not well-defined margin, and presented no appearance of granulation. No fluid of any kind escaped from the *os uteri*. It was now accidentally mentioned that the bleeding was

first noticed during the preceding night, and that it supervened immediately upon the act of sexual intercourse, which was attended with severe, deep-seated pain.

The patient was a strong person, of the bilious temperament, full habit of body, and subject to obstinate constipation of the bowels, and to attacks of erysipelas. The treatment consisted in the free abstraction of blood from the arm, the exhibition of an active saline aperient at intervals, of an anodyne at bed-time, and complete repose in the recumbent posture. The uterine hœmorrhage ceased soon after the operation of venesection, but returned, to a slight extent, during the ensuing night. On the following day, a feeling of distension and tenderness of the abdomen still remaining, eight more leeches were applied to the hypogastrium, and the anodyne ordered to be repeated at bed-time. On the third day, the hœmorrhage had completely ceased, and the patient expressed herself quite comfortable, but weak. On introducing the speculum at this period, the parts were found greatly reduced in size, both labia falling freely within the orifice of the instrument. They were covered by a quantity of muco-purulent secretion, on removal of which, the orifice before noticed appeared as a shallow ulcer with uneven surface. A small quantity of blood escaped during examination, caused, doubtless, by pressure of the instrument. The sore was treated with the solid nitrate of silver. From this period the patient had no recurrence either of hœmorrhage or pain; nor was the speculum afterwards used, as no symptoms indicating the existence of local disturbance were developed. She was delivered of a plump, healthy child, at the full term of utero-gestation, on the 11th of October, five months after the occurrence of the hœmorrhage.

The preceding cases scarcely require further comment. They illustrate some of the most common forms under which uterine congestion, or uterine apoplexy, occurs during pregnancy,

and the manner in which such state interferes with the process of utero-gestation. Nor need much more be said in reference to treatment; as this will be sufficiently evident if the pathology of the case be clearly ascertained. The general indications are, to diminish the redundancy, or to rectify the unequal distribution, of the circulating fluid; to tranquillize the nervous system, the disturbance of which is sometimes the cause, sometimes the effect of the preceding condition; and to maintain a healthy state of the secretions, and especially to secure the due performance of the digestive and assimilative functions.

The first indication will be answered by abstraction of blood, either by venesection, or by means of leeches from the hypogastrium or loins. The quantity to be removed must be regulated by the habit of body and constitutional power of the patient, by the urgency of the symptoms, and the effect produced upon the circulation. The tumefaction of the cervix uteri, and the occasional escape of blood therefrom, might, on being superficially considered, suggest this as a part suitably adapted for depletion; but, unless urgently called for by some peculiar feature in the case, any course likely to be followed by ulceration or suppurative action should be carefully avoided, on account of the great tendency to interstitial deposition and consequent induration, which is manifested in this part of the uterus, as a consequence of inflammatory action. When induration is once established, it is very difficult of removal, and interferes materially with the comfortable discharge of the uterine functions afterwards, both as regards menstruation, and pregnancy; and will often be found to continue as an extremely troublesome affection to a late period of life. Leeching and scarification of the cervix can only be serviceable in cases of deep-seated inflammation, or general *metritis*, especially when the contiguous peritoneal surface is involved.

Soothing or anodyne remedies are also of great benefit in the

class of eases now under consideration. A full dose of opium given after bleeding, and being onee or twiee repeated at suitable intervals, if indieated, frequently renders further depletion unnecessary. It tranquillizes and allays the exeited state of the nervous system, allowing time for, and indueing a state more favourable to the restoration of the healthy balanee of the eireulation. Great eaution is necessary, however, in referenee to the administration of opiates. Two or three full doses may be produetive of the most satisfaetory results, but it ean seldom be judiciously continued beyond this, on aeeount of its injurious effeet upon the seeretions. Nor are repeated small doses of this remedy less objeetionable; their tendency is to inerease rather than to soothe exeitement, and they appear, in some instanees, to exert a partieular effeet upon the eontraetile power of the uterus. I am quite eertain that I have frequently witnessed violent uterine pains follow the administration of small doses of laudanum, when it has been preseribed as a palliative in eough or diarrhœa, during pregnaney. When the frequent repetition of anodynes is judged advisable under these eireumstanees, eamphor and extraet of hyoseiamus in form of pills, or some similar eombination, will generally be found to answer better than opium, having less tendeney to disorder the mueous funetions.

The state of the bowels forms another important subjeet for eonsideration. After the aeute stage of the affeetion has passed, the vaseular system having been relieved, and the hœmorrhage, if any, arrested or subdued, a dose of eastor oil, or sulphate of magnesia dissolved in water, should be administered, and a gentle aetion kept up afterwards. Due attention must be paid to the state of the urinary funetions. The strietest quiet should be enjoined, with light digestible food, eooling beverages taken at a low temperature, and abstinenee from wine and all fermented liquors, exeept sueh as may be eonsidered medieinally necessary.

CHAPTER VIII.

CAUSES OF ABORTION—*continued.*

Of Abortion associated with a diseased state of the uterus, and not referrible to any of the before-named causes.

It has already been shown, that out of every hundred cases of abortion, not more than thirty could be attributed by the patients themselves to accidental, or any other appreciable agency: the rest being vaguely referred to a weak state of health, especially to the condition denominated an "inward weakness," to previous abortion, difficult labour, protracted recovery, and in some instances, to diseases of a specific nature. The two hundred and seventy-five individuals ranged under this head in Table X., were, with a very few exceptions, examined with the speculum, either before, or within three or four weeks after the event took place; and in every case thus submitted to examination, disease of the lower, or of the internal part of the uterus, and in a few instances, of the vagina, was found to exist. Some of those who had the disease in a severe form and of long standing, underwent the necessary course of treatment at the time, and recovered: but a great number disappeared after being two or three times prescribed for; unwilling, apparently, to believe that further attention was necessary.

One hundred and forty-one of the above individuals have a second, some of them a third time presented themselves for treatment; being again pregnant, and labouring under a precisely similar train of symptoms as on the previous occasions. Their reappearance was in accordance with a preconcerted arrangement. The remaining one hundred and thirty-four I have lost sight of: they may not have found any need of further assistance; or, perhaps, have removed from the district.

In fifteen of those who have been a second time treated, the issue has terminated unfavourably. Fifty-four have already arrived at the full period of the process; of whom three were delivered of still-born children, and in fifty-one the child was born alive and in health in each case. In the remainder, the treatment has been so far successful as to lead to a confident hope that the issue will be favourable.

The symptoms which denote the existence of disease of the uterus are susceptible of scientific arrangement; their seat and character, and the order of their occurrence being founded upon physiological principles. They may be divided into *pathognomonic*, or those signs which require for their development, the existence of the disease in question; and, into occasional or accidental disturbances: the latter being common to this as well as to other forms of disease capable of deranging the health generally. Of the former class are: 1st. Leucorrhœal discharges, whether these be simply of a mucous character, or mixed in variable quantity with pus, sanies, or blood,—provided the latter be not the natural product of menstruation; accompanied, 2ndly, with an indefinable, deep-seated aching of the lower belly. 3rdly. A fixed pain of peculiar character, on one or both sides of the body near the groin, occupying the situation of the inguinal canal, and being, generally, unaccompanied with swelling. 4thly. Aching of the loins, implicating the region of the kidneys and upper part of the *os sacrum*. 5thly. An involuntary and uncontrollable

inclination to eompress the lower abdominal viseera, by an effort whieh is expressively denominated "bearing-down." 6thly. Rigors, lassitude, and remittent feverishness. Amongst the other elass of symptoms may be enumerated, disturbanee of the urinary organs, as frequent desire to void the urine, with inability to do so with eomfort; wandering pains around the chest and abdomen, along the spine, throughout the limbs, and about the back part and summit of the head and the faee; nausea, loss of appetite, painful digestion, irregular bowels, cramps, palpitation, hysteric fits, convulsions, &c. I shall proceed briefly to notiee the prineipal morbid conditions indieated by the first elass of symptoms as above enumerated.

1. *Leucorrhœa.* Vaginal diseharges, vulgarly denominated the whites, are of such frequent occurrence during pregnaney, that, were it not for the lesion of structure with which they are almost invariably assoeiated, and the distressing sympathies awakened during their existence, it might, with reason, be questioned whether they were naturally intended to fulfil some espeeial purpose in the economy, conneeted with the eondition under which they oeeur. The term, in its general aeeeptation, comprehends all discharges from the generative organs which are not mixed with menstrual blood; which neither result from retention of the ovum or some of its appendages, nor depend upon causes known to have a specifie origin. The idea commonly entertained respecting their nature is, that they eonsist merely in an augmentation of the natural product of the vaginal mucous membrane, or of that lining the uterus. This was the belief, until very reeently, of most authors who have written upon this subjeet: but it is, nevertheless, far wide of the truth.

The term leueorrhœa, or the whites, eonveys but a very vague and indefinite idea of the nature of the disease of whieh it constitutes a frequent, although by no means an invariable

concomitant symptom. Its presence, under certain forms, is *always* an indication of disease; although its absence is not a circumstance of sufficient importance to warrant a contrary inference. When carefully examined and properly understood, it becomes a valuable auxiliary in the diagnosis of uterine disease, and is consequently of considerable practical importance. It exists under two distinct forms, the one very different from the other, both as regards the properties of the secreted fluid, the sympathetic disturbances by which each is attended, and also as to the nature, extent, and precise seat of the organic lesion upon which each depends. In one, the discharge is a white fluid of variable consistence, the prevailing properties of which are those of ordinary vaginal mucus; in the other it is found of a yellowish, greenish, or brownish colour, being in greater or less degree mixed with pus, sanies, or blood. For the sake of distinction, I have named the former, mucous leucorrhœa; the latter, purulent leucorrhœa.

Mucous leucorrhœa. There are two well-marked varieties of this affection, distinguished by the sensible properties of the discharge, and the source whence it issues. In one, the secretion is a *transparent, glairy* fluid, of the consistence of the white of egg, communicating no stain, but only a hardness, to the linen upon which it is allowed to dry, like that produced by albumen or starch. Generally it has an *alkaline* re-agency which is very decided when tested at the mouth of the uterus; but becomes more faintly so on its arrival at the os externum, especially if incorporated with any considerable proportion of the vaginal secretion, in which case it may become more or less acid. It is sometimes furnished by that portion of the vaginal membrane which is reflected upon, or is in the immediate vicinity of the cervix uteri; but it is much more frequently the product of the internal surface of the uterus, especially the cervical portion of it; thus constituting the true uterine catarrh of most authors. It indicates

a state of high vascular excitement, but not of suppurative action, of the parts whence it issues. It sometimes, though rarely, exists as a vaginal catarrh, unattended with uterine irritation, and is then accompanied by great heat and feeling of discomfort about the vagina, irritable bladder, and general constitutional disturbance. Whatever be the seat of the affection, it usually supervenes upon exposure to cold, error in diet, or sexual excitement, and is attended by general febrile irritation, pain of the loins, bearing-down, and physical depression. When the attack occurs during pregnancy, the symptoms are much more urgent than under other circumstances, and not unfrequently lead to abortion. Upon tactile examination, the vagina and lower part of the uterus are found unusually hot, tumid, and pulsating. The speculum reveals an injected state of the mucous membrane near the uterus; and the boundary of the os presents a vivid redness, indicative of the state of the parts within the organ. It seldom requires the use of local applications, being completely amenable to constitutional treatment.

The other form of *mucous leucorrhœa* is peculiarly an affection of the mucous membrane of the vagina. It is characterized by an *opaque* discharge of a pure whiteness, having the consistence of very loose curds, or cream. It is *not glairy,* or but very slightly so, and exhibits an intensely *acid* reaction. It is often furnished in great abundance, being attended with constant aching and sense of constriction around the lower part of the person, œdema of the extremities, and sometimes of the face, great lassitude, palpitation, and general anœmia. It is to this form of leucorrhœa that the terms "fluor albus," and "the whites," appear to be especially applicable. The vagina is much relaxed in this form of the complaint, and there is often œdema, with a troublesome itching of the vulva. It may be worthy of remark, in passing, that this latter symptom, which is often found to be extremely

obstinate and annoying, has been promptly relieved, for a time, in cases which have occurred under my own notice, by the use of a lotion composed of hydrocyanic acid and morphine;[1] but it is certain to return, so long as the causes of the affection remain unremoved, being occasioned by the irritating nature of the acid product with which the vaginal secretion is highly charged under these circumstances. This form of leucorrhœa is seldom the cause of abortion, except from the constitutional debility which, by long continuance, it is apt to induce. The general treatment should consist of tonics, with a generous, but not over-exciting diet; and local remedies are also indicated, of which an injection of the nitrate of silver, in the proportion of a scruple of the salt to half a pint of distilled water, is one of the most serviceable.

Purulent leucorrhœa. This form of the affection is much more frequently met with, during pregnancy, than the preceding. The discharge, which is characterized by the presence of pus, is always indicative of suppurative inflammation. It has a yellowish, or greenish colour, or it may be of any intermediate shade between a light yellow and dark brown, depending upon the nature and extent of the diseased surface by which it is furnished, the presence or absence of blood which is very liable to be effused under states of excitement, and the quantity of mucus with which the morbid product becomes mixed in its transit outwards. It communicates deep stains to the linen upon which it falls, which are said to be difficult of removal by washing. It has an *alkaline* reaction when removed immediately from the diseased surface; but from the presence of a quantity of vaginal mucus, it is sometimes, but not always, found to have become neutral-

[1] Lotion for the relief of *pruritus vulvæ*.

℞ Acidi Hydrocyanici, m.lx.
Morphiæ Muriatis, gr. viij.
Aq. Destillatæ, ʒviij. misce, fiat lotio.

ized, or appears faintly acid, on its arrival at the os externum. The symptoms which accompany this affection are, alternate chills and feverish reaction; lassitude; aching of the loins and of the extremities; pain of the inguinal, or of the right or left hypochondriac regions, along the spine, or at the back part of the head; and disordered secretions. The vagina is seldom implicated in disease of this character; but the lower part of the uterus is found in a state of hypertrophy, sometimes indurated, and very generally presents a surface of ulceration or of excoriation of greater or less extent. Abortion occurs far more frequently under this condition of parts than any other, of which it may therefore be accounted as a very common cause.

Some idea respecting the actual prevalence of leucorrhœal complaints during pregnancy, may be formed from the following statement of facts, resulting from 2000 inquiries. Of this number, 1116 had the whites at the time the inquiry was made, and a considerable number more had suffered under a similar ailment at some former period. In 936, or 83 per cent., the discharge bore undoubted evidence of the presence of pus, or of sanies, and in some instances it was more or less mixed with blood: of these, 544, or 58 per cent., had previously miscarried. The discharge in the remaining 180 was said to be perfectly colourless, communicating no stain to the linen. I ascertained subsequently, however, that in several of these cases, the patient's statement, in reference to this point, was incorrect; the characteristic stain either having escaped observation at the time, or else the nature of the affection had undergone some change during the interval which had elapsed since the first inquiry. Such cases therefore, ought properly to belong to the first-named division, although they have been retained as originally put down: 31 of these had previously miscarried. The following is the order in which these cases

occurred, the whole having been subdivided, for reasons before stated, into groups of 200 each: —

Table XI.

Showing the number of instances in which leucorrhœa was found existing in two thousand pregnant women; the relative proportion of cases wherein the discharge was simply mucus; those in which it exhibited purulent properties; and the number of abortions which happened under each condition respectively.

	Average prevalence of leucorrhœa during pregnancy.				Prevalence of abortion under the two forms of leucorrhœa relatively.			
	No. of cases in which leucorrhœa existed.	No. of abortions for which *no cause* could be assigned.	No. of individuals entirely free from noticeable vaginal discharges.	No. of abortions happening from *specified causes.*	Mucous leucorrhœa.	No. of abortions for which *no cause* could be assigned.	Purulent leucorrhœa.	No. of abortions for which *no cause* could be assigned.
1st 200	106	55	94	18	13	3	93	52
2nd 200	99	62	101	20	12	1	87	61
3rd 200	103	52	97	17	19	1	84	51
4th 200	108	45	92	16	24	4	84	41
5th 200	119	59	81	15	32	8	87	51
6th 200	108	52	92	16	21	4	87	48
7th 200	119	71	81	14	12	4	107	67
8th 200	125	68	75	18	17	1	108	67
9th 200	120	53	80	18	20	1	100	52
10th 200	109	58	91	20	10	4	99	54
Total, 2000	1116	575	884	172	180	31	936	544

Leucorrhœa is much less frequently met with in the unmarried than in the married woman. In the former, the discharge is seldom purulent or sanious, and, consequently, is not often the result of suppurative action. It is generally associated with difficult or disordered menstruation; coming on, in some instances, at the period of puberty; in others, appearing as a compensating evacuation in cases of suppression of the menses. It is sometimes observed to recur periodically during pregnancy, at periods corresponding to the natural catamenial term; being accompanied by a

similar train of symptoms, continuing the same number of days, and observing the same free interval as was customary with the menstrual function under normal circumstances. Or, when the morbid discharge is constant, it may be augmented at certain intervals, at which times it is not unfrequently mixed with blood. Persons most liable to such discharges, are those whose constitutional powers have been enfeebled by chronic disease, fever, loss of rest, the use of improper or innutritious food, indolence, dissipation, and a multitude of causes of a similar nature. Some constitutions are evidently predisposed to leucorrhœal affections; those, for instance, of a scrofulous or scorbutic diathesis, and the offspring of parents who have suffered severely from venereal affections which have been imperfectly cured, or improperly treated.

Married women generally first become aware of a preternatural vaginal discharge, a few weeks or a few months after marriage. In those of an exciteable temperament, who have previously been subject to inordinate determination of blood towards the uterine system, the discharge early exhibits purulent properties; and should this take place to any considerable extent before impregnation shall have been effected, the accomplishment of this organic act may be over and over frustrated, and sometimes long delayed; or the condition of the parts may arrive at such a state of derangement as entirely to prevent it for a length of time; and, in a still more aggravated form, it is not an unfrequent cause of barrenness.

The period at which uterine disease most commonly begins to be troublesome, however, is during the second and third months of pregnancy, when the vascular apparatus of the generative system has arrived at a state of active congestion, very similar to that which immediately precedes inflammation. At this period, the organ will be found to have encroached considerably upon the lower part of the vaginal canal,

where, increase in its lateral dimensions, with a simultaneous change effected upon the surrounding parts, resulting in turgescence of their textures, contributes to maintain it in an unyielding position;—circumstances which should always be had in remembrance in the treatment of the diseases of pregnancy, and especially in regard to the share which the matrimonial congress frequently has at this particular juncture, in preventing a favourable issue. There can be little doubt that a great number of cases of uterine disease, attended with vaginal discharge, and frequently resulting in abortion, may be attributed to intemperate sexual intercourse during the early months of pregnancy. Of forty-five women pregnant for the first time, all suffering under leucorrhœal affections, twenty-eight had the discharge of a decidedly purulent character. I examined the uterus in twenty-five of these, and all, with but one exception, had ulcerative disease of the lower part of the uterus; in the exceptional case, the vaginal membrane was studded with warty excrescences which were known to have had a sylphilitic origin. I examined several of those also, who declared the discharge to be colourless, and found suppurative disease to be equally prevalent in them. Of more than two thousand individuals labouring under leucorrhœal affections, in whom I have examined the uterus with the speculum, I have, with comparatively few exceptions, found the existence of structural lesion sufficient in degree to account for all the symptomatic phenomena. In the great majority of the cases, the cervix and labia uteri were the seat of disease; in some there was excoriation, erysipelas, high vascular congestion, or a warty state of the vagina; in others, the labia, free from ulceration, were thickened, with their inner margins callous and flabby; or else they were tense, and presenting a vivid redness around the orifice of the uterus; both which appearances indicate the existence of disease within the organ.

It sometimes becomes a question of considerable interest, and of no little importance in married life, to determine whether leucorrhœal discharges in the female are capable of producing the assemblage of symptoms in the male, constituting the ordinary phenomena of blenorrhagia. If questioned upon this subject, I should have no hesitation to return an answer in the affirmative, in all cases where the discharge in the female exhibits decidedly purulent properties; having myself witnessed several incontrovertible instances of the kind. And if further proof were wanting to place the matter beyond dispute, it might be supplied from the numberless cases of similar discharges in infants, coming on a few hours or days after their birth, and being, unquestionably, the result of purulent inoculation received during their transit into the world. Besides a number of examples of purulent ophthalmia, and also of purulent inflammation of the vagina, in the female, and of the internal surface of the prepuce and urethral orifice, in the male infant, in children whose mothers have owned the existence of a yellow vaginal discharge before delivery; I have recorded the particulars of more than thirty cases of purulent ophthalmia, independently of affections of similar character in other organs, as the nose, ear, or anus, in which I have had ocular proof of the existence of uterine ulceration in the mother, both before and after labour.

But the *experimentum crucis* in reference to the virulent nature of this product, and which, in my opinion, places the question beyond the possibility of further dispute, is contained in the history of Case XXXI., recorded in the following chapter. The reason why its effects are not more frequently witnessed in the male, may be accounted for by the powerful modifying agency of the vaginal secretion with which the morbid product is intimately mixed and thereby materially altered in its properties, immediately after its exudation.

Collections of matter not unfrequently form within the

cellular structure of the pelvis, especially in the vicinity of the bladder or rectum, and are discharged, by ulcerative process, through the vagina; and similar accumulations are said sometimes to take place within the Fallopian canals, making their escape through the uterus. These, when superficially examined, might be mistaken for the affections now under consideration. By the proper application of the means which are now available for facilitating pathological inquiry, however, there can be no difficulty in arriving at a correct diagnosis.

Discharges of blood from the vagina frequently take place during pregnancy, without necessarily disturbing the healthy relations of the ovum. They sometimes occur periodically, and thus create a doubt as to the existence of a fœtus in utero, even after its movements have been palpably distinguished. *Spurious menstruation* is the term which has already been employed to designate this phenomenon. A woman may experience all the symptoms which usually attend the early weeks of pregnancy, feeling confident, in her own mind, that conception has been accomplished. On the near approach of the next monthly period, however, the well-known train of sympathies are again awakened, and, in due time, the discharge appears, exhibiting all the characters of normal menstrual blood, both as to its quantity, its sensible properties, and the period of its duration. Notwithstanding these negative evidences, the indications of pregnancy continue still to unfold themselves, until the recurrence of another menstrual crisis completely extinguishes the cherished expectations of the individual anxious to become a mother. A third and a fourth recurrence takes place in the usual manner, the size of the abdomen now rapidly increasing, the general health being, perhaps, at the same time infirm, and the patient begins to entertain serious fears of the existence of organic disease. The real state of the case is generally determined, however,

about this period, by the ascent of a portion of the uterus out of the pelvic into the abdominal cavity, accompanied with certain other unequivocal signs of the existence of a new being within the womb. The menstrual phenomena usually cease to appear after quickening; but not unfrequently they continue to be repeated at intervals until the end of the process, and may be equally so throughout the period of lactation. Several examples of this description were noticed in a former chapter.

Uterine hœmorrhage, as witnessed during pregnancy, occurs under two opposite conditions of the uterus and of the constitution generally, and the discharge of blood proceeds from two widely different sources: each is accompanied also, by its peculiar train of symptoms; one being considerably more urgent in its demands for treatment than the other. The first of these forms was already alluded to when treating of abortion from accidental detachment of the ovum, resulting from violence, or from the separation which unavoidably takes place during the expansion of the uterus in cases of placental implantation over, or in the immediate vicinity of, its lower orifice. In these cases, the bleeding comes on suddenly and without previous warning, and occurs independently of previous disease. It is just as dangerous in the strong and healthy, as in the diseased, ill-fed, and debilitated; and is equally common among all classes of women.

The form of hœmorrhage intended more especially to be noticed in this place, is that which is constantly associated with a diseased state of the lower and external parts of the uterus, or of the inferior portion of its internal cervix. The existence of these morbid conditions is, for the most part, plainly evidenced by certain characteristic symptoms too prominently developed to be overlooked, although not unfrequently misinterpreted. In cases where the menstrual phenomena are developed during pregnancy, the interval between

one accession and another, is occupied by a discharge of the "whites;" which discharge, however, is not white, but yellow, bearing unmistakeable indications of the presence of pus. Very often this morbid secretion maintains its distinguishing properties during the alleged menstrual period, the blood exuded being only just sufficient to give it a brownish or sanious tinge; and the latter, is sometimes observed to escape in form of small, granular clots, giving to the whole a grumous character. In some cases, the discharge of blood is very irregular, both in quantity and duration. It may exist but for a few hours, or it may be continued for several weeks or months together, without abatement; but still exhibiting, if closely examined, the purulent character. The conditions under which these phenomena are commonly noticed, may prevail for many years unmitigated, or even throughout the whole period of connubial life, in defiance of all the methods of treatment which medical art *ordinarily* employs. They keep the body in an infirm state of health constantly, eminently predisposing to infections, epidemic, and all accidental maladies; the whole period of pregnancy is one of continued suffering and misery; the health of the offspring is endangered, or its constitution permanently enfeebled; and they constitute, in the great majority of instances, the predisposing, as well as determining causes of abortion, and very often destroy altogether the aptitude for impregnation.

Although the uterus does not in itself possess a very exalted sensibility, its sympathies are as numerous as, and perhaps more lively than those of any other organ of the body. Thus, under the existence of disease of the most angry appearance, such as irritable ulcer, implicating the whole of its lower aspect; induration, with an erysipelatous or excoriated surface; fissured ulceration extending deeply within the cervix; or corroding ulcer; there is but very little,

if any sense of feeling, in the part affected. Pressure upon the diseased part — except in states of inflammatory hypertrophy, involving the body of the organ—is seldom perceived, and even the application of severe caustics, or of the actual cautery, produces no pain. Nevertheless, the suffering occasioned by these affections is of the most distressing character, and often makes fearful inroads upon the constitutional powers. It is manifested in its most painful form in parts more or less remotely situated from the uterus, but having an immediate relation with it through nervous intervention. The contiguous organs situated within the pelvis will, therefore, be among the first to suffer; those, namely, which receive a moderate supply of nerves from the sacral plexus, with which the nerves of the uterus are in immediate connection: these are the bladder, ureters, rectum, and the internal pelvic muscles; the sympathy is next awakened about the groins, the hips, thighs, and labia pudendi; then across the loins, along the spine, and throughout the whole nervous system, and, by extension, to the organs of digestion and the circulation.

2. Deep-seated aching of the hypogastric region, is a constant attendant upon uterine disease. It is generally described as occupying the part immediately behind the pubis; but, on account of its being unaffected by pressure, its seat is no sooner sought for in this part, than another situation is referred to, first in one iliac fossa, then in the other, sometimes between the two, and then to the lower part of the sacrum. It is, in fact, an affection of all these parts together, having no point of location in particular. It is an early symptom of uterine catarrh, and becomes particularly distressing in inflammation of the lining membrane of the uterus.

3. Fixed pain of one or both groins, occupying the situation of the inguinal canal. This symptom is of a purely nervous character, and is generally most severe at the point

where the fibres of the round ligament become mingled with the structures amongst which they are inserted. It is generally of a dull aching character, and confined to a space that may be covered with the point of a finger; but it sometimes becomes more acute and lancinating, and involves a much greater extent of surface; being continued across the hypogastrium from one side to the other, on a level with the os pubis, or in a direction towards the mons veneris, labia pudendi, crest of the ilium, or lower half of the recti muscles. Whichever of these situations be the part affected, the pain is traceable along the ramifications of the musculo-cutaneous, inguino-cutaneous, and external pudic nerves, all which inosculate freely with communicating branches proceeding from the hypogastric plexus on the side of the uterus, and conducted thence with the round ligament to the anterior part of the abdomen.

In general, this sympathetic affection is not only unaccompanied with soreness, but appears to be relieved by the application of pressure; and there is entire absence of swelling of the parts implicated. Exceptional cases, however, are occasionally met with. I was lately in attendance upon a lady upwards of thirty years of age, who, four years previously, had borne a living child at the full term of utero-gestation. The labour was of the ordinary kind and duration, but the placenta was retained six or seven hours after delivery, owing to its morbid adhesion to the walls of the uterus. After her recovery, which was protracted and tedious, she had a yellow leucorrhœal discharge, accompanied with severe lumbar and hypogastric pains, and constitutional irritation. She menstruated for a length of time at regular periods, and with the usual concomitant symptoms; but the discharge was observed to be more abundant than formerly, and the yellow secretion occupied the whole of each interval between one crisis and another. This state of things had existed four years, during

which period she had miscarried four times, twice before, and twice after quickening. I found her health and strength greatly enfeebled, the yellow discharge abundant, accompanied with irritable bladder, and a fixed, deep-seated pain of the left inguinal region. This spot was not painful under pressure, neither was there any evidence of tumefaction. She informed me, however, that a painful swelling, the size of a small orange, sometimes made its appearance on the left side of the abdomen: it came on suddenly, simultaneously with pain of the stomach and palpitation, to attacks of which she had been occasionally liable for some time past. It continued a few hours, sometimes a few days at a time, and generally disappeared by rubbing, or the application of hot salt.

The anterior lip of the uterus was in a state of chronic inflammatory hypertrophy, only slightly painful upon pressure; but a lively sense of suffering was produced in the left inguinal region and corresponding side of the sacrum when the pressure upon the uterus was suddenly increased. This lip was considerably enlarged, filling the upper orifice of an ordinary sized speculum. Its most dependent part was occupied by a shallowish, indolent-looking ulcer, of oblong shape, having an irregular, but well-defined, and slightly raised margin: this extended to the verge of the inner cervix. External to its boundaries the surface of the cervix appeared erysipelatous.

On a subsequent occasion, I had an opportunity of examining the tumour before alluded to. It was about the size of a poulet's egg, and occupied a situation on the left side of the body precisely half way between the left inguinal canal and the umbilicus. It was tender when pressed upon with the point of the finger, but was relieved, and soon completely disappeared under a gradually increased pressure, accompanied with slight friction, with the palm of the hand.

There was no diffuse fulness of the abdomen. At first I felt inclined to regard this swelling as a hernia; its appearance under the influence of violent spasmodic pressure exerted upon the abdominal viscera, and its ready subsidence by manipulation, appeared to favour this view. I afterwards ascertained, however, to my entire satisfaction, that its existence was owing to cramp of one of the inter-tendinous divisions of the rectus muscle on that side of the body.

I look upon the above as a fact of no inconsiderable value in diagnosis. It establishes clearly, and, I think, conclusively, the nervous character of the symptoms now under consideration. I have had frequent opportunities of witnessing similar manifestations in cases of uterine disease; and I now regard them as unerringly symptomatic of inflammation, ulceration, or induration of the anterior labium, or of the corresponding part of the cervix uteri.

4. Aching of the loins and adjacent parts, implicating the region of the kidneys, sacrum, crest of the ileum, hips, thighs, &c. These symptoms, like the preceding, are also of a nervous character, and owe their prevalence to communications which Dr. Lee has shown to exist between the hypogastric, or uterine, and the spinal nerves distributed upon the surrounding pelvic viscera. This connection is formed principally through the medium of branches given off from the hypogastric plexus, which are thence conducted between the folds of the broad ligaments to join the lumbo-sacral, anterior crural, ileo-inguinal, and branches of the superior gluteal nerves, in their course towards, or upon, the parts to which they are respectively distributed. The same anatomical arrangement serves to explain the nature and origin of the suffering experienced in the various forms of painful or difficult menstruation, as well as of that phenomenon familiarly known under the appellation of "false pains;" an affection which will sometimes harass the patient, night and day, for

two or three of the latter months of pregnancy, without ceasing.

One of the most distressing of the class of symptoms now under consideration is an extremely acute, smarting, or stabbing pain of the coccyx, or of the region between the point of this bone and middle of the perinœum, and implicating the intermediate parts, especially the lower fibres of the sphincter muscle of the anus. As this affection is usually accompanied with a violent compressing effort, it is liable to be mistaken for tenesmus, and to lead to the suspicion of fœcal accumulation within the bowel. It is, nevertheless, entirely of a sympathetic nature, arising generally from inflammation of the posterior labium uteri, or of fissured ulceration of the same part, or of one of the commissures. Severe pain of similar character is, no doubt, sometimes occasioned by pressure of the gravid uterus upon the nervous cords which go to form the hypogastric plexus, in their passage along the surface of the last lumbar vertebra and front of the sacrum. The suffering sometimes witnessed under the existence of these symptoms is indescribably agonizing. The treatment should consist in rest in the recumbent posture; in the exhibition of eight or ten grains of camphor combined with half the quantity of extract of hyosciamus, or with one or two grains of opium; and in the free application of nitrate of silver to the lower part of the uterus. Not unfrequently, the last named procedure will be all that the practitioner will find requisite in the treatment, with the provision always of aperient medicines; the most urgent symptoms being sometimes instantly alleviated after a single application of this remedy.

5. Involuntary and uncontrollable inclination to compress the lower abdominal and pelvic viscera by an effort which is expressively denominated "bearing down," is a symptom of uterine disease which may be said to arise out of the preceding.

It may be truly observed that, were the nervous system of the internal genital organs completely isolated from that of the surrounding viscera, disease of the uterus might possibly proceed to entire destruction of the organ without any manifestation of suffering beyond that of constitutional debility. As it is, however, the case is widely different. The nervous interlacement which is formed between filaments proceeding from the hypogastric ganglions and plexuses of the uterus, and those of the surrounding organs, is so free, that disease cannot long, or in any considerable degree exist in the former, without more or less implicating the latter. Thus it is, that although morbid structural changes of the uterus may exist for a length of time without the patient's attention being particularly directed to the part affected; yet the disease is early and painfully manifested by sympathetic disturbance of the bladder, the rectum, the kidneys, and any other parts having an intimate relation with the nervous system of the uterus. To one or other of these organs, attention is often principally directed as the seat of the primary affection, the real nature of the case thus escaping unnoticed, and the remedial measures adopted being, consequently, for the most part, ineffectual. One of the leading symptoms complained of is a dull, deep-seated, diffuse aching of the hypogastrium, sometimes more urgent in one region than another; being occasionally aggravated under states of distension, as by fœculent accumulation within the rectum, or the presence of urine in the bladder, which, under ordinary circumstances, would create no noticeable inconvenience. The suffering is of a kind which pressure alleviates; hence the constant inclination to compress the parts by the effort of bearing down which the patient is constantly making with a view to relieve.

6. Rigors, lassitude, and remittent feverishness are symptoms, which ordinarily reveal the presence of pus

in the circulating current; indicating a condition of great importance in a pathological point of view, and demanding the best skill and attention of the practitioner. It is true, the occurrence of rigors is seldom seen, under these circumstances, in that violent form which ushers in acute inflammation; or which precedes or accompanies the formation of pus in the viscera contained within the chest or abdomen. They happen under a different aspect, being frequently and daily repeated, attended with remittent hectic symptoms, and inducing, after a time, a degree of debility which often amounts to absolute prostration.

Sir A. Cooper states: "when matter is formed upon the natural surfaces of the body, which are connected with vital organs, much irritation and disturbance take place; but, when matter is produced upon the surface of a wound, in a part not important to life, or upon parts of little vital importance, then its formation is often unpreceded by irritative fever."[1] Although suppurative disease of the uterus may, in some respects, be regarded in the light of superficial or cutaneous ulceration, on account of the constant escape of the morbid product; yet, inasmuch as this does not take place immediately after its formation, and as its removal is not accomplished, generally speaking, by manual agency, it must be looked upon as holding the same relations with similar affections occurring in the deep-seated organs of the body.

That the purulent product of uterine disease is constantly liable to be returned into the circulation, is sufficiently proved by the fact, that after its formation, it is detained, for an indefinite period, upon the surrounding mucous surfaces, in which the process of absorption is always in active operation: and the constitutional irritation which is generally set up under these circumstances, bears forcible evidence of such transference having been effected. The condition of the system thus created, eminently predisposes it to violent attacks

[1] Lectures, vol. i. p. 113.

of disease from comparatively trivial causes, against which it has no adequate power to contend; and acute inflammatory affcetions, and fever, are more frequently attended with disastrous eonsequences, and arrive at a speedier issue, in eonstitutions thus tainted than in others.

And even under circumstanees where the causes of inflammation do not prevail, the presenee of but a small portion of pus in the blood has a most injurious tendeney; as it undoubtedly possesses the power of disuniting, or of materially altering the arrangement, of the elemental constituents of the latter; destroying its nutritive qualities, and engendering a disposition or diathesis peculiarly favourable to the formation of chronic abscesses, purulent accumulations within the joints and large cavities, and to those *caco-plastic* deposits in the parenchymatous structure of the vital organs, which constitute the leading and essential condition of Phthisis. In reference to this subjeet, Dr. Carpenter observes: "There is great reason to believe, that when Pus is introduced into the Blood, it may induce such a change in the character of the fluid, as speedily to impair its vital properties; so that the Pus-corpuscles will rapidly propagate themselves in the Blood, and the plasticity of the Liquor Sanguinis will be diminished. In this manner the whole system will be seriously affected, and there will be a tendency to deposits of Pus in various organs — especially in those which, like the Lungs and Liver, serve as enunctories to the system — without any previous inflammatory changes in these parts." [1]

Other disturbances are frequently developed during the existence of uterine disease, and may become exeeedingly troublesome and lasting. Such are, an irritable state of the bladder and kidneys, aeeompanied with an altered state of the secretion therefrom, which may be mixed occasionally with blood, mucus, or pus, and exhibiting the usual indications of inflammation; pain of the right or left hypochondriac

[1] Principles of Human Physiology, 3rd edit., paragraph 806.

regions, occasioned by congestion of the portal vessels in immediate relation with the subjacent organs; the general symptoms of dyspepsia, as impairment of appetite, nausea, flatulent distension, &c.; pain along the spine, and headache; symptoms of asthma; palpitation; convulsions; cramps, &c. But as these symptoms are as often absent as present, and are equally if not more frequent under other conditions, no further notice of them will be demanded in this place.

CHAPTER IX.

CAUSES OF ABORTION — *continued.*

Diseases of the Gravid Uterus, considered as causes of abortion.

The observations which I propose to offer upon the nature and treatment of those forms of uterine disease that most commonly occasion abortion, will necessarily be limited, compared with the amount of matter collected together upon the subject. Through the facilities kindly afforded by my esteemed colleagues, I have been enabled to extend my investigations over a vast and fertile field for inquiry, during which, upwards of seven thousand pregnant women have presented themselves for treatment; a considerable number of these have been several years under my particular notice, during which period many have had repeated pregnancies. Besides these, a great number of both married and unmarried women, not bearing children, but suffering under various forms of disease peculiar to females, have been brought under treatment, as well as a multitude of infants and children of both sexes. The latter were occasionally made the subject of inquiry with a view principally to ascertain the period of the first appearance, as well as the primary feature and mode of development of, inherited specific forms of disease, in cases

where such were known, or suspected previously to exist in the parent. Although forming a very interesting and important branch of pathological study, the consideration of these is not intended to occupy any place in the present treatise, except so far as their occasional mention may be thought serviceable as a means of elucidating the nature of the affection from which they may appear to have derived their origin.

Certain forms of uterine disease predispose to abortion at particular periods of the process of pregnancy, which circumstance I have made partly subservient to the following classification of them. Future facts may modify or alter this arrangement, which is altogether arbitrary; it has been adopted chiefly for the purpose of facilitating description and of avoiding confusion, and is, doubtless, susceptible of improvement.

1. *Inflammation* and *superficial erosion* of the lower part of the uterus, implicating one or both labia, and more or less of the external and internal cervix; accompanied by a yellow vaginal discharge which is occasionally tinged, sometimes largely mixed, with blood. This affection commonly interferes injuriously with the process of utero-gestation in the seventh, eighth, and ninth months of pregnancy.

2. *Varicose ulceration*, commonly occupying the back part of the anterior labium, sometimes being confined to the posterior, and, occasionally, implicating both, is a frequent cause of abortion. It is always attended with a considerable degree of vascular hypertrophy of the adjoining parts. The discharge is muco-purulent, sometimes grumous or sanious; it is often largely mixed with blood, and, in some cases, is replaced by a dribbling hæmorrhage which may continue for weeks or months uninterruptedly, if active measures be not adopted for its relief. Varicose disease oftener becomes troublesome during the latter than in the first half of pregnancy; and consequently, for the most part, interferes with the process of utero-gestation after the period of quickening.

3. *Ædema* of the womb. The cellular structure of the cervix during pregnancy is often more or less loaded with serum, which may make its escape either slowly and constantly, or by sudden gushes of considerable quantity at a time, as if the amnial membrane had been ruptured. The same parts are also sometimes similarly distended by congestion of the venous capillaries; but there is a well-marked difference between the two. Abortion sometimes occurs in the latter months of pregnancy, under these conditions.

4. *Fissured ulceration* of one or both commissures, of the anterior or posterior labium, or implicating all these parts at the same time, together with inflammatory hypertrophy of the adjacent structures. This state of parts is accompanied with a yellow vaginal discharge which is sometimes mixed, in variable quantity, with blood; and it predisposes to abortion about the middle period of pregnancy, from the end of the third to the end of the sixth, or middle of the seventh month.

5. *Induration* of the cervix, with or without abrasion of surface, is generally a chronic affection, but assumes more the acute character during the existence of pregnancy. It is, for the most part, accompanied with vaginal discharge, which, if excoriation or ulceration of the labia be co-existent, is of a yellowish colour; but white and glairy, frequently transparent and gelatinous, when the surfaces are unbroken. Abortion most commonly happens, under this state of parts, in the third and fourth months of pregnancy, and is always attended with considerable suffering.

6. *Endo-uteritis*, or inflammation of the lining membrance of the uterus during pregnancy, is frequently accompanied with hypertrophy of the whole organ, sometimes with induration of the cervix, or erosion of one or both labia. The discharge is usually thin, comparatively scanty, having a sanious or ichorous character, and is sometimes decidedly sanguinolent. Under this form of disease the product of conception

is frequently thrown off during the first few weeks, or in the second or third month of pregnancy, accompanied with profuse discharges of blood, and often with intense suffering, similar to what takes place in some of the worst forms of dysmenorrhœa. I shall have occasion to revert to this affection in the next chapter, as a common condition of sterility.

7. *Follicular ulceration* sometimes constitutes the leading feature of uterine disease in cases of abortion. Of itself, however, it does not appear to create any considerable inconvenience; except on account of the irritable and inflamed state of the deeper-seated structures with which it is occasionally, though not always, associated, and to which circumstance therefore, any important functional inconvenience occurring during pregnancy, may be reasonably referred.

8. The *gonorrhœal virus* is sometimes, perhaps frequently, implanted upon the lower surface of the uterus, being followed by inflammation of specific character, and accompanied with purulent discharge which may become very abundant, and difficult to be distinguished from that which women commonly denominate the yellows,— the result of simple erosion. The accompanying inflammation implicates the labia and adjacent cervix, and is especially liable to be extended to the lining membrane of the organ; it thus constitutes a frequent cause of abortion, which may occur at an early or late period according to the extent and severity of the affection.

9. *Syphilitic* disease, both in its primary, secondary, and tertiary stages, is capable of inducing abortion at any period of the process, but most frequently perhaps about the sixth and seventh months. In the secondary form, its presence may in many instances be detected in the uterus, years after it was believed to have been eradicated from the system, and when no other evidence of its existence but this can be discovered, until it is seen to develope itself in unmistakeable characters in the offspring. The appearances presented by

the labia and cervix of the womb affected with secondary syphilis are striking, and, I think, peculiar to this class of affections: they must therefore be regarded as of considerable importance in diagnosis.

10. *Prolapsus uteri.*

I shall proceed presently to describe each of the preceding forms of disease somewhat more fully; but in order to understand clearly why abortion should be more liable to occur at an earlier or later period of pregnancy under some morbid conditions than others, it may be advisable to take a cursory glance at the physiological changes which the neck of the uterus undergoes during its development in the gravid state.

The cavity of the uterus is naturally divided into two distinct portions: the body and the cervix. After the product of conception has made its escape from the Fallopian canal into the uterus, it occupies alone the first-named of these divisions; the cervix remaining still void, except by its peculiar secretion; and the *membrana decidua uteri* completely isolates the one from the other. As the ovum grows in size, the body of the uterus correspondingly increases in dimensions for its accommodation. The cervix undergoes a simultaneous increase both in the length and thickness of its walls; but its cavity remains unchanged until towards the end of the third month, at which stage of the process it begins to be encroached upon by the expansion of the upper division; the change commencing at the part where the walls of the one are immediately continuous with the other. From this period the distension gradually and steadily progresses during the remainder of the process; so that, in the ninth month of pregnancy, the cervix is entirely obliterated, and what was formerly a long tube of nearly equal dimensions throughout, becomes identified with the general uterine cavity. It thus appears that a complete and very important

metamorphosis of the whole cervix takes place during pregnancy, and it will be readily understood that such a change is absolutely required for the successful accomplishment of the process. Any impediment therefore, capable of hindering the free expansion of this part of the organ at the proper time, must necessarily interfere more or less with the healthy discharge of the function of utero-gestation, and endanger, in a degree corresponding to its extent, the safety of the ovum. It is in this manner that chronic induration of the cervix, or induration in that less extensive but more acute form constituting an invariable condition of fissured ulceration, as well as the hypertrophied state accompanying inflammation and superficial erosion, interfere with the process of pregnancy at periods corresponding to the extent of structure implicated in each of these forms of disease respectively.

1. *Inflammation and superficial erosion of the lower part of the uterus.*

On referring to a table containing the records of four hundred cases of abortion and threatened abortion, in all which disease of the uterus was an accompanying condition, and for which no other cause could be assigned for the disturbance complained of, the average occurrence of the superficial granulating ulcer, or of diffuse inflammation of the cervix, amounted to twenty-six in every hundred. In the majority of these, the event happened between the middle of the sixth and middle of the ninth month. In some, however, the symptoms commenced earlier, the neighbouring structures being considerably more involved in such instances than is commonly witnessed in this class of cases, and many of them had suffered under an aggravated form of the disease on previous occasions.

The simple granulating ulcer may be confined to one labium only, the other being perfectly normal. More fre-

quently, however, it implicates both at the same time, extending to some distanee upon the external eervix, and passing more or less within the orifiee, which often appears to be the part most severely affeeted. The whole eervix is in a state of hypertrophy, and considerably softened; with the exception of the inflamed erust upon which the uleer is situated. Upon taetile examination the whole lower part of the uterus is found to be altered in form; the lips are elongated and flabby, and the orifiee open; although the margin of the uleer, if its internal boundaries happen to be within reach, is felt to be hard and resisting. The ulcer presents a flattened, velvety surfaee, with a raised, cord-like external boundary, which the practised toueh will be able to deteet without diffieulty.

When viewed through the speeulum, (the glass instrument, having an internal orifiee of an ineh and one or two eighths in diameter, will be found most serviceable,) the whole eervix, unless it be unusually large, will readily fall within the upper aperture of the instrument. The diseased surfaee, when both labia are implicated, appears irregularly eireular, about the size of a shilling — larger or smaller, — of a bright red eolour, and eovered over with a coating of mueo-pus; this being removed by means of a piece of dry lint, to whieh a portion of ropy mueus often adheres derived from the eentral orifiee, the granulations are brought palpably to view. The outer margin of the sore is raised and well-defined, although irregular, generally wavy or stellated; and beyond this is seen the healthy surfaee of the cervix, whieh often exhibits an erysipelatous blush to the extent of an eighth or a quarter of an inch around the uleerated margin. A few drops of blood generally exude during examination. Sometimes the anterior labium alone is diseased, at other times the posterior; but the former more frequently than the latter.

The perfect eure of this form of ulcer may be long delayed, espeeially if the treatment be left off before eieatrization is

complete. Its internal margin, situated near the os, is always the last to heal; and in this situation a small portion of the ulcer may remain open for a long time, and even resume its former dimensions, if not perseveringly and judiciously managed. In some instances, during the process of treatment, I have observed its appearance to become completely changed, in the following manner. As the subjacent tumefaction subsides, and the healing process progresses, the granulations, surrounded by a tight margin of the new cicatrix, start up above the ordinary level of the sore, becoming at the same time pale, spongy, and losing the distinct granular aspect which they formerly possessed. This mass sometimes assumes a warty appearance. It may be easily removed, however, by the application of suitable remedies.

The granulating ulcer is most commonly observed in women of the sanguine-lymphatic temperament, lax fibre, and feeble circulating powers. When met with in the primipara, the first indications of its existence are noticed before the period of quickening, often as early as the second or third month. It may exist for years, and during several pregnancies, without causing abortion; but attended always with great suffering, and by frequent attacks of disease arising from accidental or epidemical causes of which the constitution is thus rendered pre-eminently susceptible. The symptoms are, vaginal discharge of a yellowish secretion, which often exhibits alkaline properties when tested at the os externum, although largely mixed with the mucus of the surfaces over which it passes, a product possessing qualities of an opposite nature, and which, on the surface of the sore by which it was secreted, is strongly alkalescent; frequent accessions of chilliness, followed by flushes of heat and irritative fever, which is often very distressing; great lassitude; aching of the back and loins, and bearing-down; disordered digestion, &c. In the latter months of pregnancy, or at whatever period the progressive expansion of the uterus begins to encroach upon

the diseased structure, all the symptoms become considerably aggravated, the inflammation is extended to the deeper seated parts; the discharge is augmented, and frequently mixed with blood, exuded from the excited capillaries of the part; the lumbar and hypogastric pains assume more of an intermittent and bearing-down character; and the uterus is often roused into efforts of expulsive contraction, which, unless speedily relieved, will lead to premature separation, if not destruction of the ovum.

Inflammation of the neck and lips of the uterus without abrasion of surface, is sometimes met with during pregnancy. The complaint is of an acute character, usually coming after exposure to cold; being attended with constitutional disturbance, aching of the pubis, and irritable bladder. On specular examination, a diffuse redness is seen to extend over the whole of the parts brought into view, giving the appearance of ordinary erysipelatous inflammation, which is the term by which I have hitherto been in the habit of designating it. The cuticle generally appears tense and smooth; but it sometimes breaks and peels off, leaving patches of excoriation which soon take on the suppurative action, and afterwards assume the ordinary characters of the granulating ulcer. This is, probably, the manner in which the latter frequently has its origin. The discharge, while the cuticle remains unbroken, is a glairy mucus; but so soon as suppuration is established, the presence of pus may be detected, if sought for.

The treatment of this as of several other forms of uterine disease proposed for present consideration, is simple, and easily managed, provided the requisite facilities be afforded, and rendered properly available. The same rule is applicable here that obtains in all chronic affections accompanied by a regular or periodical discharge to which the system has been for a length of time accustomed: and, although the principal affection be strictly local, and amenable to local treatment,

yet, constitutional measures cannot, and ought not, in any case, to be dispensed with. In reference to the complaint now particularly under consideration, depletion should be employed at the commencement whenever the system will bear it, before any local means are practised likely to arrest or diminish the discharge: there are few constitutions, indeed, that cannot comfortably sustain the loss of as much blood as a few leeches are capable of withdrawing, and especially when this loss is intended to act only as a compensation for a morbid evacuation, the suspension of which can only have a beneficial result. The internal remedies should be of a soothing and alterative nature, and continued for a length of time without interruption: the local applications should be repeated at longer or shorter intervals, as the changes effected upon the disease may seem to require.

Case XXX.

Abortion in three successive pregnancies; extensive erosion of the cervix uteri; reappearance, during the fourth pregnancy, of all the symptoms previously experienced, which were subdued by remedial measures, and a favourable result obtained.

Mrs. T.'s first pregnancy terminated in an abortion at six months and a half; her second, at seven months; and her third, at six months: the fœtus, in each instance, bearing evidence of having died several days previous to delivery. She could assign no cause for the occurrences. She had suffered no hardship or privation; being the wife of a kind husband, an artizan, whose earnings were amply adequate to their comfortable maintenance. She was married at nineteen years of age, up to which period she had menstruated regularly since the age of sixteen, when the change was first established without inconvenience. Occasionally, she had experienced a slight leucorrhœal discharge, which

was perfectly colourless, and unaecompanied with ill health. She was a woman of the phlegmatic-sanguine temperament, and scrofulous appearance, but had never suffered from disease of scrofulous character.

When in the third month of her first pregnancy, she suffered from a severe cold caused by prolonged exposure to the weather in an inclement season of the year. During the ensuing night, she was attacked with shivering, which was followed by pain of the abdomen, the back, limbs, and head, and fever. For this she received no treatment beyond the application of a bran poultice to the belly, and a dose of aperient medicine, of her own prescribing. After a few days, she felt much better, with the exception of aching of the loins and abdomen, and a leucorrhœal discharge, which came on as the constitutional symptoms subsided. A month afterwards, she was found labouring under great lassitude, with the same aching pain around the lower part of the person, and a copious vaginal discharge of a yellow colour. Six or eight weeks after quickening, the symptoms became aggravated, the child ceased to move, and the burthen seemed to sink into the lower part of the abdomen, the discharge was augmented and mixed occasionally with blood, expulsive pains came on, and she was delivered of a still-born fœtus about six months and a half grown. The lochial discharge was considerable, continuing ten days, and then succeeded by one of the same muco-purulent character as that observed before delivery. Menstruation reappeared at the proper time, and was three times repeated before she again became pregnant; the yellow discharge occupying the whole of each menstrual interval. This latter was continued during the whole of the succeeding pregnancy, which terminated in precisely the same manner as the preceding; and the same train of symptoms were present on the third occasion.

I was summoned to attend this patient on the 12th of

January, 1846, when in the sixth month of her fourth pregnancy. She had not menstruated for six months. She believed she had "quickened" about five weeks previously, having at that time experienced a violent commotion in the lower part of the abdomen sufficiently strong to produce a degree of faintness; but since then she had felt no fœtal movement at all, and believed, if she was really pregnant, that the child must have perished. The abdomen was enlarged, hard, rounded, without fluctuation; the umbilicus was level with the surface; and the mammæ and areolæ were characteristically impressed. The placental soufle was distinct in several parts of the abdomen, but especially on the right side, in which situation also, the sounds of the fœtal heart were faintly audible.

The leading symptoms were, vaginal discharge of a yellow colour, and so profuse as to require especial provision in regard to dress, whenever she attempted to walk about; constant aching of the loins, around the whole lower part of the person, and of the limbs; extreme depression of spirits without adequate cause, and inability to take exercise from a feeling of debility and constant weariness; alternate accessions of chilness and flushes of heat, which, in the evening, and generally at two or three o'clock in the morning, had frequently been aggravated into a severe hectic paroxysm; and a dull, deep-seated, pain of the right side of the abdomen below the short ribs, not increased by pressure. On the morning of my visit, the pain of the back began to be aggravated at short intervals, accompanied with bearing-down efforts, and the discharge was tinged with blood.

The cervix uteri was greatly swollen; the labia were expanded, irregular, slightly hardened, and extensively occupied by ulceration. The anterior labium alone filled the aperture of a large-sized speculum: more than half of the part thus brought into view was a granulating surface bounded by a

raised angry-looking margin, and covered with purulent secretion; the posterior labium was in like manner implicated. By readjusting the speculum, the os uteri, which formed the central point of the disease, was brought into view; it was slightly open, and its lining membrane was occupied, as far as could be seen, by granulations. The whole surface was covered with large, soft-looking granulations, from which a quantity of blood oozed out during examination. No blood escaped from the os uteri. Whilst examining, a labour-pain, or, at least a "bearing-down" pain came on, when the surface of the ulcer became instantly suffused, and was very soon covered with a layer of thin sanguinolent fluid which trickled down into the tube.

The treatment was commenced by the exhibition of two grains of opium combined with an equal quantity of *hydr. subm.* immediately, which had the effect of tranquilizing the system, of completely subduing the pains, and of procuring four or five hours sound sleep. Eight hours afterwards, five leeches were applied to the hypogastrium, and an ounce of castor oil ordered to be taken when the bleeding from the leech-bites should have completely ceased. On the following day she was perfectly free from both pain and hæmorrhage, and the leucorrhœal discharge was less in quantity: to this end, however, the state of rest in the recumbent posture which had been strictly enjoined, and abstinence from all exciting ingesta, doubtless materially contributed. The uterus was at this time again examined; the parts were much reduced in size, and less irritable. The solid nitrate of silver was freely applied to the whole of the ulcerated surface, the anodyne repeated, and a dose of a mild saline aperient was ordered to be taken thrice daily. On the third day, she expressed herself greatly improved, and was in high spirits, having felt the movements of the child several times since my previous visit. The double *battement* was strongly audible, numbering 144 pulsations

in the minute, those of the placental bruit being at the same time 88. The opiate from this date was discontinued, and an evening dose of camphor with hyosciamus given in its stead.

At the end of a week, her health seemed remarkably improved; but she was still languid and unable to be out of bed long at a time. The uterine sore, which was less in extent, as well as more healthy in appearance, was again treated with nitrate of silver. Five grains of *hydr. cum crœtâ* were at this time ordered to be administered along with the anodyne every evening, and an ounce of *mist. ferri co.* three times each day. This plan was pursued for about three weeks longer, when all internal remedies were discontinued; the patient having become strong and healthy, and capable of performing her household duties without the least fatigue or inconvenience. At the end of six weeks, the uterine sore, which had been seven times treated with the caustic application, was quite healed; there was no longer any appearance of leucorrhœal discharge, and the health was better than it had been since before marriage. She was delivered of a full-grown, healthy female child on the 27th of April. Her recovery was speedy and favourable.

Case XXXI.

Threatened abortion in the eighth month of pregnancy; granulating ulcer of the lower part of the uterus; result, favourable. Experiment performed with a view to determine the nature of the morbid product.

Mrs. G., aged twenty-six, of the nervous-sanguine temperament, stated that she was about seven months and a half advanced in her fifth pregnancy on the 13th of February, 1847. She began to menstruate at eighteen years of age, without an unfavourable symptom, and continued in the enjoyment of good health until after marriage, at nineteen and

a half. In the second month of her first pregnancy, she began to be troubled with leucorrhœa, from which affection she had previously been free. The discharge was of a yellow colour, accompanied with lassitude, loss of rest, deranged digestion, frequent nausea and vomiting, aching of the loins, and "the gravel." The symptoms varied from time to time, in character, becoming aggravated as pregnancy advanced; several times threatening a premature issue. The child, which was born alive at the full term, in October, 1841, had purulent ophthalmia; the inflammation commenced on the second day after birth, and speedily resulted in destruction of both corneæ, and consequently in total blindness: it died emaciated, at the age of nine months. Her second child was still-born, a few weeks before the completion of the full term, in August, 1843; the leucorrhœal affection and other attendant symptoms having existed, in the form before noticed, during the whole period of pregnancy. Her third pregnancy, which terminated favourably in July, 1844, was attended with a precisely similar train of symptoms, abortion being several times imminently threatened. The child had a violent attack of purulent ophthalmia, which commenced, as in the first instance, on the second day after delivery, and resulted in total blindness from opacity of both corneæ, but without escape of the humours. By the aid of a judicious and persevering course of treatment, practised by an eminent oculist of this town, the opacity is gradually diminishing, and the child is now able to see its way without difficulty. Her fourth pregnancy terminated in an abortion at the end of the fifth month, about a fortnight after quickening, in April, 1846.

From the first invasion of the symptoms in the spring of 1841, she had been from time to time, under medical treatment, which, so far as could be learned from the patient's own statement, had principally consisted in the exhibition of tonic and soothing remedies, and in the occasional use of vaginal

injections; all which had failed to afford any but partial and temporary relief. The uterus had never been subjected to specular examination.

When first the patient presented herself to my notice, she was pale and emaciated, languid, feverish, and irritable. She had frequent accessions of rigors and hectic flushes, accompanied with palpitation; intermittent pains of the loins and hypogastrium, bearing-down, and frequent desire to void the urine. The leucorrhœal discharge was abundant, of a deep yellow colour, and alkalescent at the os externum. The lower part of the uterus was large, slightly indurated, and occupied, to an extent equal to the superficies of the orifice of a large-sized speculum, by an ulcerated surface of angry and irritable appearance: the disease extended to some distance within the orifice, the boundaries of which appeared superficially fissured. The abdomen was of the size usually observed in one in the eighth month of pregnancy; the breasts, however, were imperfectly developed, the areolæ pale, and the follicles presented no remarkable appearance. The placental soufle was very distinct above the umbilicus, and the fœtal heart was audible in several places, beating 136 in the minute.

There appeared no indication for bleeding, even to the smallest amount; the pulse being weak and tremulous, and the uterine system free from congestion. The solid nitrate of silver was therefore immediately and freely applied over the entire surface brought into view; two grains of opium combined with the same quantity of *hydr. subm.* were ordered to be administered at bed-time, and a dose of castor oil the following morning. On my next visit, she expressed herself much better, she had been quite easy since the application of the nitrate, which had the effect, almost instantaneously, of relieving the lumbar and hypogastric pains and bearing-down, and of allaying the irritability of the bladder: she had voided the urine but twice during the preceding fifteen or sixteen

hours, although, previously, the attempt was made almost every half hour. A dose of a mild saline aperient was now ordered to be taken every five or six hours, and a full dose of camphor with hyosciamus every night. On the fifth day (February 18th,) the patient having continued to improve in the interim, the vaginal discharge was found to have considerably diminished, and the sore, which appeared contracted and more healthy, was again treated with nitrate of silver. She was free from pain, and able to attend to her household duties. An alterative and tonic plan of treatment was now commenced, consisting of small doses of *hydrarg. oxymur.* night and morning, and a dose of quinine twice daily.

From the last-named date, I lost sight of this patient until after her delivery, which took place at the full term of utero-gestation, on the 27th of March, 1847. Three days after delivery, the infant was brought to me labouring under purulent ophthalmia; both eyes were severely inflamed, and discharged freely a quantity of thick yellow pus. It may be mentioned that this affection was perfectly cured by a few free applications of the solid nitrate of silver to the inside of the lower eyelid in the manner first adopted and recommended to the profession by my friend Mr. Walker.[1] Upon visiting the mother, I learned that after using for a few days the medicines prescribed on the 18th of February, six weeks before delivery, she felt her health so much improved as to believe further treatment to be unnecessary; although the yellow vaginal discharge continued to prevail, to greater or less extent, during the remainder of the period, and she suffered occasionally from pain of the back, and micturition. Slight hœmorrhage came on a few hours before labour, which was neither protracted nor unusually difficult; the lochial evacuation continued until the sixth day, being then replaced by a yellow leucorrhœa of nearly equal abundance. The labia

[1] Oculist's Vade-mecum, p. 40.

uteri were occupied by an ulcerated patch the size of a shilling, extending within the os uteri, which was nearly in the centre; the surface was bounded by a raised, wavy margin, and presented a granulating aspect, except the anterior labium, in the middle of which was a portion the size of a large pea, projecting below the level of the rest: this was in a state of induration.

The patient was now willing and anxious to submit to such treatment as should be judged necessary to eradicate from the system the disorder from which she had so long suffered. Accordingly, so soon as it was thought prudent, a course of alterative and tonic treatment was commenced, consisting principally of a mild mercurial, with the compound decoction of sarsaparilla, continued at suitable intervals during several weeks. The sore was treated with the solid nitrate of silver, which was first applied a fortnight after delivery, and four times repeated, at intervals of five or six days. In the second week in May the cure was considered complete. The child, which was at first pale, flabby, and fretful, improved in condition as the health of the mother became restored, although no medicine was administered to it besides an occasional aperient.

Having had numerous opportunities of witnessing the coexistence of suppurative disease of the uterus in the mother, and of purulent ophthalmia in her infant, I have long been in the habit of regarding the purulent product of the former as being possessed of peculiarly virulent properties. This view was materially strengthened by an accident which occurred to myself in the year 1844. Being in attendance upon a lady in her accouchement who had for some time previously had purulent leucorrhœa, and whose infant, a few days after delivery, had an attack of purulent ophthalmia, I received some of the matter upon a slight, open wound on my right hand. It ought to be mentioned, perhaps, that I

happened to be in a bad state of health at the time, the result of fatigue. On the following day, the sore beeame angry and painful, and the whole hand was erysipelatous. Very soon after, the absorbents beeame violently inflamed as far as the axilla; and on the third day the whole limb, shoulder, and part of the faee were greatly swollen and erysipelatous, attended with eonsiderable constitutional irritation. As a feeling of doubt, however, was lately expressed to me by a friend, in reference to the correctness of my views on this subject, I was determined to put the matter to the test of experiment as soon as a proper opportunity should present itself. The present case afforded the requisite facilities for this purpose.

Experiment. On the 11th of April, fourteen days after confinement, when the patient presented herself for treatment, the whole lower part of the uterus was occupied by an indolent-looking, granulating uleer; the loehia had eeased six or seven days previously, and there now existed an abundant diseharge exhibiting mueo-purulent eharaeters. The ophthalmie affeetion of the infant was eured. Some of the matter, removed from the surface of the sore, was applied beneath the upper eye-lid of a full-grown terrier dog. The manifestations were as follow:—

At the the end of the first day, the eye appeared dim, dull, and heavy; and there was slight vaseular fulness. At the end of the second day there was evidence of inflammatory turgeseence, the eyelids being swollen, and the ocular eonjunetiva suffused: the animal appeared wishful of shunning the light. On the fourth day there was violent inflammation of the whole eonjunction, with a plentiful seeretion of a greenish yellow pus. This affeetion was soon subdued by the application of the solid nitrate of silver, and subsequently by an opiate and aluminous collyrium.

It is not hence assumed, however, that the product of

uterine ulceration possesses virulent properties in all cases; I have no sufficient data to warrant such conclusion: moreover, in the preceding and similar instances, the affection may possibly have had a specific origin. In the following case of inflammation of the urethra however, supervening upon uterine ulceration, and exhibiting all the symptoms of virulent gonorrhœa, I feel morally convinced, that no implantation of infectious matter had been effected by sexual contact.

Case XXXII.

Purulent leucorrhœa becoming augmented during pregnancy; ulceration of the cervix; subsequent inflammation of the urethra; threatened abortion; issue, successful.

R. M., twenty-two years of age, was admitted a patient of the Lying-in Hospital in February 1847, when six months and a half advanced in her fifth pregnancy. She was a tall, strongly-built woman, and was said to have enjoyed vigorous health in earlier life; but, since marriage, she had been constantly ailing. She was married before puberty at the age of fifteen and a half; she menstruated for the first time six months afterwards, but did not become pregnant until nine months later still, and was delivered of her first, a full-grown child, at the age of seventeen years and a half: the child was puny and died at four months old. Her second child, born at the full term, died aged six months. The third pregnancy ended in an abortion at four months, for which no cause could be assigned. The fourth child was born alive, but died emaciated, aged seven months. Since the middle of her first pregnancy she had constantly been the subject of an "inward weakness."

Whilst labouring under a severe cold in January 1847, she had a severe accession of lumbar and hypogastric aching and bearing-down, and the leucorrhœal discharge was augmented,

becoming at the same time of a darker colour, thinner in consistence, and producing considerable irritation and excoriation about the external parts over which it passed. These symptoms had existed a fortnight, when the irritation began to affect the bladder; there was a more frequent desire to void the urine, which occasioned much pain in escaping. Although the patient was constantly under medical treatment, her sufferings continued to increase, and at the time of her admission as a patient of the Hospital, the affection must have attained to an aggravated pitch of severity; but on account of the inconvenience occasioned by the recent destruction of the Institution by fire, the requisite investigation was necessarily omitted.

Three weeks afterwards, on the 4th of March, I was requested to see her at her own home. The pains of labour were said to have commenced on the previous day, and the midwife in attendance became alarmed from the appearance of hœmorrhage which had been flowing freely several hours before my arrival. The movements of the fœtus were lively and vigorous. The cervix uteri was soft, and greatly hypertrophied; the whole of its lower part being occupied by an ulcerated surface, which was studded with large, spongeoid granulations, from which blood was freely exuding. The cellular structure surrounding the urethra was greatly thickened, appearing completely to occupy the arch of the pubis, and the urethral orifice was surrounded by soft, angry, prominent granulations which were exceedingly painful. The introduction of the catheter, which was rendered necessary on account of suppression of urine, occasioned intense suffering.

The remedies immediately employed were: the application of ten leeches to the hypogastrium, after which two grains of opium combined with the same quantity of *hydr. subm.*, to be administered; the free use of the solid nitrate of silver to

the diseased surface; a tent of lint saturated with tineture of matico was applied to the same part and allowed to remain until the following day; and the *Lotio Plumbi* kept eonstantly applied to the external parts. Sixteen hours afterwards, the patient was found perfectly free both from pain and diseharge, but had not slept. The bladder was again relieved by means of the eatheter, the use of which, however, was not afterwards required. The opiate and the introduetion of a renewed pledget were repeated, and a dose of castor oil was ordered to be given on the following day.

From this date the patient had no return, either of hœmorrhage, suppression of urine, or of labour pain, and her health and strength daily improved; the yellow leueorrhœal diseharge however continued, aeeompanied with aehing of the loins, &e., but in a much milder form than before, and these symptoms gradually subsided under the use of the nitrate of silver and mild aperient medicines. The local remedy had been four times used at intervals of five or six days, when the family removed to a distant part of the town, and I heard no more about her until four or five days before delivery, whieh took plaee, at the full term of utero-gestation, on the 5th of May.

During the last fortnight of pregnaney, all the symptoms had beeome aggravated; the leucorrhœal discharge was augmented, the lumbar and hypogastric pains were more distressing, the bearing-down efforts strong, and frequently repeated, and the voidance of urine was attended with suffering, and often attempted. On the 1st of May, my attendanee was requested for the purpose of faeilitating or hastening the labour, whieh was believed to have eommeneed on the previous day. The lower extremity of the uterus was found to be situated high up and not pressed upon by its eontents, nor were the pains uterine, as was proved by the organ remaining unaffected during the prevalence of a paroxysm. The solid nitrate of silver was again freely applied to the

diseased surfaee, which had beeome greatly increased in extent as eompared with its state five weeks previously. An anodyne medieine was also administered, and a dose of castor oil ordered to be taken the following morning. The soothing medicine was twice repeated, and the pains were altogether absent until the fifth of the month, when proper expulsive efforts eommeneed, and she was delivered of a full-grown fœtus after an easy labour of three hours duration. The child had harelip with defieieney of the palate to its posterior boundary. The patient now underwent a eourse of treatment, by whieh she was perfeetly restored in three weeks.

The preeeding eases may be taken as a type of their kind. They go to establish three positions:—

1. That what is eommonly called ulceration of the eervix uteri may be the predisposing as well as the immediately exciting cause of abortion.

2. That the purulent product of uterine ulceration, under some forms at least, possesses virulent properties, eapable of producing disease in another individual, or in another part of the same individual, by inoculation; and probably eapable also, by being absorbed into the eireulation of the same person, of materially disordering the fluids, and of ereating thereby a peeuliar susceptibility to disease.

3. That the applieation of eausties to the uterus, and the employment of other aetive measures, whieh I have heard praetitioners objeet to during pregnancy, as likely to endanger the well-being of the offspring, may not only be safely administered, but that they eonstitute in faet one of the prineipal means of securing both mother and ehild from danger.

2. *Varicose Ulcer.*

The form of ulcerative disease to be next notieed as liable to induee abortion in the latter two or three months of pregnancy, is that known as being of the varicose character. It is

observed to prevail in about six or eight instances out of every hundred, and is often difficult of perfect cure before delivery. It is generally met with in women of the bilious temperament, hard fibre, who have been subject to piles and profuse menstrual discharges, and to derangement of the biliary organs. The premonitory condition of the parts consists in a hardened and hypertrophied state of the cervix, which is traversed in various directions by a number of tortuous, dark-coloured trunks, about the thickness of a probe or a crow's quill, raised above the surrounding surface. Larger and more prominent points are here and there noticed, indicating the situation of inosculation of one branch with another; and, generally, at one of these points the ulcerative process is set up, which soon extends through the coats of the vessel, and escape of blood, in greater or less abundance, immediately ensues. The ulcer, which is not long after in being developed, presents an uneven, livid aspect, with irregular margins, near which a few tortuous vessels may be seen ramifying; it now secretes a quantity of pus, and often has small, dark clots of blood or fibrin, the size of a pin's head, lying loose upon the surface. It usually occupies but one labium, the anterior more frequently than the posterior; but sometimes the whole circumference of the cervix is implicated.

This affection is not always confined to the lower part of the uterus, but occasionally implicates the whole venous system of the organ in form of general uterine phlebitis, a condition of serious importance, requiring a most judicious and energetic plan of treatment. When the acute affection thus involves the whole uterus, and the proper remedial measures are not timely practised, abortion is almost inevitable, whatever period the process of gestation may have arrived at. The relief afforded by the means which Nature adopts is, sometimes, though not always, adequate to the temporary necessity of the case. Ulceration, however, is

almost certain to supervene upon the rupture of a vein, and although the relief thus afforded may be sufficient to secure the present safety of the ovum, the consequences may be lasting and troublesome. When acute uterine phlebitis is allowed to exist but for a short time unrelieved, the inflammatory action is extremely liable to be extended to the peritoneum, and the case is hurried to a speedy and fatal termination; or, if continued in the chronic form, it almost invariably results in effusion into the abdominal cavity, constituting the common form of ascites.

The symptoms indicating the existence of varicose ulceration during pregnancy, are, a sense of heat and fulness of the hypogastrium; bearing-down pains of an intermittent character, similar to those of the first stage of labour; aching of the loins and along the thighs; irritable bladder, with inability to retain the urine the usual length of time; disordered digestion; sickness and headache; alternate rigors and flushes of heat; languor; and vaginal discharge. At first, the morbid secretion consists of a white glairy mucus; this in a short time assumes a brownish colour, or is mixed with blood, and soon afterwards exhibits purulent properties. Labour, whether premature or at the full term, is attended with a profuse discharge of blood, and this mostly continues, in a moderated degree, several weeks longer than the term which the lochia ought naturally to occupy. On ceasing, the purulent secretion reappears; but the bleeding is liable to recur, in form of what is commonly known as secondary hœmorrhage, at irregular intervals during the rest of the nursing period; the patient remaining all the while in delicate health. Interstitial fibrinous deposits now take place, and the parts become consequently more or less indurated; the ulcer degenerating into the fissured variety, in which state it may remain for years.

The treatment should be active, and early adopted. Bleeding from the arm, and afterwards the application of leeches

or of cupping glasses to the loins or hypogastrium, should be immediately practised; the quantity of fluid drawn being regulated by the effect produced upon the symptoms, or by the constitutional power of the patient. Generally speaking, however, it should not be carried to fainting. The recumbent posture must be strictly enjoined. Three, four, or five grains of *hydr. submur.* combined with five or six grains of extract of hyosciamus, or with two grains of opium, should be given at bed-time, and repeated according to circumstances, followed always, after eight or twelve hours, by a cooling saline aperient. If further bleeding be judged necessary, the application of a few leeches to the hypogastrium, or top of the sacrum, will be preferable to venesection. The local treatment consists, at first, in the application to the lower part of the uterus, of the *strong solution* of nitrate of silver: this should, in no instance, be omitted. In the subsequent stages, when the acute symptoms have been completely subdued, the solid nitrate may be preferred. If the bleeding should continue, the solution above mentioned, or the strong solution of sulphate of zinc combined with a suitable proportion of *vinum opii*, the tincture of matico, or some other like remedy should be kept constantly applied. And this applies equally in all cases of passive hœmorrhage when the discharge is furnished from ulcerated surfaces, as well as in other chronic discharges, whether sanguinolent, purulent, mucous, or watery, issuing from the neck of the uterus. The application is made in the following manner, and may be managed by the patient herself, with the aid of the *Prolapsus tube*, as efficiently as by the practitioner. A pledget of lint, consisting of six to ten folds, should be prepared by rolling it loosely up into the proper size and form; to this a portion of strong thread about eight or ten inches long, must be attached. The size of the pledget, when prepared, should be just sufficient to pass readily along the tube.

The *Prolapsus tube* or the speculum being adjusted, the lint, saturated with the solution intended to be used, must be carried, by means of a long forceps, to the diseased surface, upon which it is to remain closely applied; the instrument being gently removed, and the pledget at the same time maintained in its situation by the forceps: the thread is left hanging out of the external orifice. In from twelve to twenty hours or more the lint may be withdrawn, and the application of the remedy repeated as occasion may seem to require.

Case XXXIII.

Abortion in the seventh month of pregnancy, preceded by spurious menstruation and prolonged hæmorrhage; varicose ulcer of the cervix; cure.

M. O'D., thirty-two years of age, of the sanguine-bilious temperament, was admitted a home-patient of the Lying-in Hospital on the 22nd January 1847, in the seventh month of her eighth pregnancy. She had for many years been subject to yellow leucorrhœa, and piles. She miscarried of her seventh pregnancy in the seventh month, having menstruated regularly through the whole period, each interval being occupied by a light-coloured discharge. She miscarried also of her sixth pregnancy in the fourth month. The delivery in both instances was preceded and accompanied by hœmorrhage, which continued also a length of time after.

She had menstruated at irregular intervals in the existing instance. The discharge came on in the usual manner five weeks before her admission, and had continued uninterruptedly ever since, accompanied with lumbar and hypogastric pains, bearing-down, irritable bladder, and great lassitude. A sense of coldness of the lower belly had for several days been experienced, and the burthen felt to have sunk low down, and was unusually heavy. No fœtal movement

could be either felt or heard, and the placental soufle was nowhere audible. The lower part of the uterus was soft and hypertrophied, being occupied, in the whole of its circumference, by a well-characterised, varicose ulcer. The os uteri, however, was not dilated, nor were labour pains present. Aperient medicine had been frequently used, so that the action of the bowels was sufficiently free.

The treatment consisted in the administration of a full dose of opium every twelve hours, and a cooling saline aperient at intervals. The local applications, which were employed with the sole view of arresting the hæmorrhage, consisted entirely of the tincture of matico. This remedy, which I always keep in readiness for such purposes, is prepared with a quantity of the coarsely-powdered leaves of the herb steeped in a liquid made with equal parts of proof spirit and water, in such proportion as to form a kind of thin paste. When used, the tent of lint, or a piece of sponge, provided, as before intimated, with a length of thread, is immersed in the tincture, which still contains the herbaceous particles, a considerable portion of which are intended to adhere to the pledget. Thus prepared, it is conveyed in the manner before stated, along the speculum or *Prolapsus tube*, and allowed to remain in contact with the part for twelve or twenty-four hours, when it is to be renewed if necessary. In the present instance, the remedy was twice repeated on succeeding days, although the bleeding was arrested from the first, and did not return. On the sixth day, slight labour pains came on, which were accelerated by the exhibition of an active aperient, and the fœtus was soon expelled in a putrid state. The treatment of the uterine affection was afterwards continued for four or five weeks, when the patient was discharged cured. She expressed herself as being in a better state of health than she had been for several years. The menstrual function has since been regularly discharged.

Case XXXIV.

Uterine hæmorrhage occurring from the end of the fifth to the end of the seventh month of pregnancy; varicose ulcer of anterior labium; threatened abortion; issue, successful.

A. C., thirty-one years of age, of the sanguine temperament, was admitted a home-patient of the Lying-in Hospital on the 7th February, 1845, stating herself to be in the seventh month of her sixth pregnancy. All her previous pregnancies had terminated favourably. A month after her fifth delivery she had an attack of secondary flooding, which came on suddenly whilst she was in the act of mounting the stairs. During the first two or three days, the blood flowed in considerable quantity, and was frequently mixed with clots; it did not completely cease until the end of three weeks. For several days preceding this event, she had felt drowsy, languid, and swollen about the abdomen; the breasts were unusually full, knotted, and painful, but soon afterwards became flaccid, and finally the secretion of milk was almost suspended. At the end of three weeks, the discharge assumed a brownish watery appearance, and then became purulent; being of a yellow colour, and communicating deep stains to the linen. In this form it remained, and was accompanied by a weak state of health, with constant aching and distress about the lower part of the person, and "gravel pains."

From the existence of a certain train of symptoms which had usually accompanied pregnancy from its earliest stage on former occasions, she fancied herself again with child in August, 1844; but the menses appearing at the usual time, and in the accustomed manner, the idea was soon abandoned. The symptoms of pregnancy continued, however, to develope themselves during the following months, although the menstrual function was periodically discharged; but each recurrence

was attended with unusual suffering, and the discharge was occasionally mixed with clots. A yellowish muco-purulent secretion occupied the whole of each menstrual interval. In the second week in December, the uterus ascended into the abdominal cavity; the fœtal movements were distinctly perceived, and she no longer doubted that she was pregnant. A fortnight afterwards,—at the beginning of Christmas,—the menstrual phænomena appeared as usual, the attendant suffering being unusually severe; the discharge was more abundant and more largely mixed with clots than it had been on former occasions, and the pains were of an intermittent and bearing-down character, and it was believed that miscarriage would certainly take place. Means were consequently adopted with a view of hastening delivery; the vagina was plugged, and medicines were administered. As the child continued to move, however, the plan of treatment after a time was changed; efforts were made to arrest the bleeding, which continued notwithstanding in the stillicidiary form, but unceasingly, until she was brought under my notice.

The placental pulse was distinct, numbering 92 beats in the minute; the double pulsation of the fœtal heart was also distinct, although feeble, and numbered 156 beats in the minute.

The neck of the uterus was abnormally large, spongy, and presented an uneven surface, expecially at its anterior part. The posterior labium appeared about the natural size, and perfectly healthy; but the anterior was large, and completely occupied by a well-defined, varicose ulcer, from several points upon which, blood was freely issuing. No fluid whatever escaped from the os uteri. The solid nitrate of silver was freely applied to every part of this ulcer, and an astringent injection, composed of the solution of sulphate of zinc and *vinum opii* was ordered to be used every six or eight hours. (I was not at that period in the habit of using the medicated tent as described in connection with the last case.) Two grains

of opium were given every night at bed-time, and a dose of sulphate of magnesia combined with tincture of hyosciamus, thrice daily.

In those cases where bleeding is indicated, it should be practised at the onset, or the practitioner should at least be in readiness to employ it on the first appearance of any symptom indicating the existence of local determination, which is sometimes liable to accrue from sudden arrest of a discharge to which the system has been for a length of time accustomed. In the present instance, however, the constitutional powers had become so enfeebled by previous hœmorrhage, that depletion, even to the smallest amount, was altogether inadmissible.

A few grumous clots, mixed with a brownish watery fluid, escaped at intervals during the day on which the caustic application was made; but after this, the hœmorrhage entirely ceased, and did not again return. A muco-purulent discharge ensued, but this also gradually decreased in quantity under the repeated application of the local remedy, and several weeks before delivery it had entirely ceased; the health being in a better condition than it had been since before her fifth pregnancy. The opiate, as at first prescribed, was five or six times repeated; after which, five grains of *hydr. cum crætâ* were given every night, and two grains of quinine three times daily. These were discontinued after three or four weeks. The patient was delivered of a full-grown, healthy child, on the 6th of April, 1845, and recovered favourably.

About six weeks after delivery, a slight discharge of blood appeared from the vagina, which the patient was inclined to regard as the natural appearance of the menses, although she was still suckling her baby. It came on while pursuing her employment as *spinner's assistant,* in the hot atmosphere of a mill, but occasioned no material inconvenience. On examining the uterus, a small, superficial, granulating ulcer occupied the anterior labium, and was surrounded by an

appearance of congestion. She stated that for several days a slight yellowish discharge had been going on, accompanied with a feeling of languor and aching of the loins, which she attributed to over exertion. A small quantity of blood was seen oozing from the ulcerated surface, to which the nitrate of silver was again applied, and repeated once afterwards.

The preceding cases go to elucidate three important points relating to phenomena beforetime imperfectly understood: —

1. That *menstruation during pregnancy* is, for the most part, perhaps always, associated with an abnormal condition, generally with ulcerative disease, of the uterus; requiring at all times, active remedial interference.

2. That hœmorrhage during pregnancy is not necessarily associated with an altered relation of the parts within the uterus, and, by timely care, need not interfere with the integrity of the ovum.

3. That menstruation, during the early periods of lactation, is not always normal menstruation, but that it is generally associated with morbid conditions which are amply adequate to the satisfactory explanation of the phenomenon; that secondary hœmorrhage is, in the majority of instances, not owing to imperfect contraction, or atony of the uterine fibres; and that the discharge very probably proceeds, under these circumstances, not from the inner surface of the uterus, but from diseased surfaces situated upon parts external to the cavity of the organ.

3. *Œdema of the Cervix Uteri.*

The third form of morbid condition of the uterus which is found to predispose to abortion in the latter months of pregnancy, is a dropsical state of the lower part of the uterus, associated, generally, with a low degree of inflammatory

aetion within the cervix. It appears to prevail in about one in every twenty-five or thirty cases. Individuals of the phlegmatic temperament, who have the circulating and absorbent powers deficient in energy, are most liable to it. Of itself, it is of very little moment, loeally considered; it is associated, however, with a pathologieal eondition of the system generally, which may prove, in its results, of considerable importanee. It indicates a strong tendency to serous effusion, both into the eellular structures and into the large cavities, and which is often found to prevail to a eonsiderable extent before the eervix uteri becomes materially affected. The fluids of the ovum are liable to be secreted in unnecessary abundance under this condition of the system; and it is from over-distension of the uterine fibres in the eighth and ninth months of pregnancy, caused by immoderate accumulation within the amnial eavity, that premature delivery is sometimes oecasioned at this period by what is called dropsy of the amnion.

Some women are subject, especially during the latter months of pregnancy, to frequent and plentiful discharges of water from the vagina, and it is often diffieult to find out whether this issues from the bladder or elsewhere: nor is the patient herself always able to satisfy the inquiry. It is sometimes evidently mixed with mueus, sometimes it has a brownish tinge; but more frequently it is like pale urine, or serum, and the distinetion between the one appearanee and the other, under ordinary eireumstance, eannot be readily determined. If the uterus of such a patient be examined, the cervix is found greatly distended, exceedingly soft and spongy, and the os uteri presents no definite boundary, so far as the touch ean diseover. The vagina is much relaxed. Upon using the speculum, a mass of soft material falls into its upper orifiee, presenting sometimes a smooth, mueous surface, or it may appear as a reticulated texture altogether devoid of mueous

covering. This is, generally, the anterior labium, the posterior appearing healthy, and of the normal dimensions; but this latter also, is frequently implicated in the change. Under either of these circumstances, the opposing surfaces of the labia, where they form the boundaries of the uterine orifice, generally present a vivid redness, and are either excoriated, or in a state of ulceration, furnishing a purulent secretion. If the instrument be allowed to remain for a short time, a quantity of a clear serous fluid may be seen exuding from innumerable pores on the surface of the hypertrophied parts; and it sometimes escapes in gushes, as if caused by spasmodic contraction of the organ.

Distension of the cervix is sometimes witnessed, equal in degree, but very different in character, from that above described; having its whole surface studded with small follicular points, and presenting altogether a very singular appearance. I was accustomed to regard this as œdema; but I now believe it to be owing simply to engorgement of the small vessels, without interstitial infiltration. The proper textures of the part seem to be completely disintegrated; its surface, which is, apparently, devoid of mucous covering, is pierced by a multitude of small, irregularly-shaped, angular orifices, within which, innumerable small thready fibres can be seen running in every direction. It does not give the idea of being worm-eaten, nor is it necessarily associated with ill-health, or impairment of the constitutional powers; the whole surface is beautifully reticulated, the openings being sufficiently large to admit the introduction of an ordinary-sized probe, which may be passed to a considerable depth among the fibres without producing the least disturbance. It has the appearance of a ball of coarse thread very loosely wound together.

A tumid state of the cervix is occasionally seen also, exhibiting a smooth, dark-red, angry-looking surface, with patches here and there of excoriation, or of aphthæ; but as this is

generally associated with a form of disease having a specific origin, its consideration will be reserved for another section.

Besides the manner, already referred to, in which abortion is sometimes occasioned under this state of the system, it is also liable to occur from congestion of the placenta, or of the uterine sinuses, followed by effusion of blood or of serum between their opposing surfaces, and by the consequent separation, and inevitable expulsion of the ovum, which is generally preceded, under such circumstances, by profuse hæmorrhage.

The treatment indicated is almost entirely constitutional. Small general bleedings should be practised at intervals, with the exhibition of *hydr. subm.* and *digitalis* in moderate doses, and saline aperients, combined or not with quinine, as occasion may require. If any abrasion of surface remain after the absorbents shall have been brought into more energetic action, and when the evacuation of the fluid shall have been in some measure effected, local remedies may then be beneficially employed.

4. *Fissurated Ulcer.*

This form of uterine disease is perhaps equally prevalent with the superficial granulating variety, and is much more difficult of cure, on account of the extent to which the subjacent textures are usually implicated. It is found to exist in twenty to twenty-four out of every hundred cases of abortion, not resulting from accidental causes. It is always accompanied by a degree of inflammatory induration, which extends more or less deeply on each side of the fissure; this is readily detected by the touch, the circumference of the orifice being uneven and lobulated. Sometimes only one fissure exists; this generally occupies one of the commissures, or it may divide one of the labia into two equal or unequal portions, and in this case the hardness may not extend beyond the

boundaries of the ulcerated chink; the rest of the circumference being healthy and of the normal consistence. Sometimes there are two fissures, one at each commissure; the intervening surfaces of one or both labia being inflamed, excoriated, or in a state of superficial ulceration. At other times the whole circumference of the lower part of the uterus is divided by three, four, five, or more deep chinks, presenting to the touch as many hard nodules, and appearing, when viewed with the speculum, not unlike the anal orifice of an infant as seen when suffering under a severe form of secondary syphilis. The fissures are often deep, and extend to a considerable distance in an upward direction.

The discharge, which is seldom so abundant as in the form of disease first described, has a decidedly purulent character, being alkaleseent, of a yellow, or greenish yellow colour, sometimes brown and ichorous, and not unfrequently mixed with blood, evidences of which are seen upon the linen upon which it falls. This variety of disease is liable to continue uncured, varying from time to time in severity, for many years, especially in married women; and it is one of the most frequent causes of what is called "habitual abortion." The event most commonly occurs from the fourth to the end of the sixth, or middle of the seventh month, but it may take place either earlier or later, according to the extent of parts involved in the disease. The discharge begins to be mixed with blood, so soon as the expansion of the uterus extends itself as far as the diseased parts, the slightest disturbance being sufficient to induce hœmorrhage; as is proved by its occasional appearance during the use of the speculum. It is scarcely possible, indeed, to introduce the instrument at some periods where the disease happens to be extensive, without witnessing a discharge of blood from the surfaces, although the procedure produce not the slightest pain or inconvenience.

The symptoms indicating the presence of the disease in question are, severe aching of the loins, and sacrum; tenesmus; irritable bladder, with frequent desire to void the urine—a state vulgarly denominated the gravel; violent pain of the lower part of the abdomen, often confined to one side, at a point a little above the groin, corresponding to the situation of the round ligament, and following the course of the inguino-cutaneous and external pudic nerves; disordered digestion; languor, &c.

Case XXXV.

Abortion in the seventh month of pregnancy; fissurated ulcer of the cervix uteri.

M. C., twenty-six years of age, of the lymphatic-bilious temperament, was admitted a patient of the Lying-in Hospital on the 2nd of May, 1846, in the seventh month of her sixth pregnancy. She miscarried of her fifth pregnancy in the seventh month; the fœtus was still-born. Since the nursing period of the fourth pregnancy, she had been troubled with a yellow vaginal discharge, rigors, pain of the loins, bearing-down, and "gravel pains." At the period of quickening she had a slight attack of uterine hœmorrhage, and the discharge had since been frequently of a dark brown colour, and sometimes mixed with blood.

At the time of her admission she stated that for a fortnight previously she had experienced occasional attacks of uterine hœmorrhage, and she had not felt the fœtal movements for eight days: the time when the child ceased to move being marked by an attack of intermittent bearing-down pains, like those of labour, accompanied with an increased discharge of blood. The burthen sank low down in the abdominal cavity; a sense of coldness and weight were experienced in that part; the breasts for some days secreted milk, but had since become flaccid.

Upon manual examination, the uterine tumor was sufficiently distinct, but no movement was elicited; nor could either the placental *soufle* or the double *battement* be heard. The upper part of the vaginal membrane was deeply injected and inflamed; the cervix was enlarged and indurated, and two deep, ulcerated fissures occupied, one the middle of the posterior labium, the other the left commissure, from both which blood exuded during examination. The adjacent parts were unusually firm, and their surfaces excoriated. She was delivered four days afterwards, of a dead, decayed fœtus about six months and a half grown; the placenta was shrivelled, but otherwise healthy; the membranes presented no unusual appearance. The lochial discharge was at first plentiful, and continued in a moderated degree ten days, when it was replaced first by a brownish watery, then by a muco-purulent secretion, which was said to be similar to what she had had formerly.

At this period, the cervix was found somewhat diminished in size; but the ulcerated fissures retained the characters before mentioned, and the whole lower part of the uterus was considerably indurated. By a course of alterative treatment, and the repeated application of the solid nitrate of silver, the disease gradually yielded; she was discharged cured at the end of nine or ten weeks after delivery. Menstruation occurred twice during the treatment; on the first occasion the discharge was seen to issue in great measure from the ulcerated surfaces; the second time it escaped almost entirely from within the uterus.

Case XXXVI.

Two successive abortions in the fifth month of pregnancy, without assignable cause; fissured ulceration, with extensive induration of the cervix.

I was requested by one of the Hospital midwives to visit

the wife of a glass-blower on the 17th of June 1846, who was said to be flooding profusely. She was forty years of age, and in the fifth month of her tenth pregnancy. She aborted of her previous pregnancy at a corresponding period of the process; ever since which, as well as for a length of time before that event, she had experienced a yellow vaginal discharge, with symptoms of ill health. For several days anterior to my visit, the midwife had been in occasional attendance, delivery being hourly expected on account of the frequent recurrence of strong labour-pains and hæmorrhage.

On specular examination, the contents of the uterus were found protruding from the orifice; their safe removal being, apparently, impracticable. At a subsequent visit, however, the pains being still severe and the hæmorrhage considerable, the ovum, situated as before, was brought away through the speculum by means of *Radford's* ovum forceps. The bleeding which followed was profuse, but did not induce fainting. The whole cervix was in a state of inflammatory induration; the boundary of the uterine orifice was completely lobulated, and cleft by five deep fissures,—two in the anterior labium, one in the middle of the posterior, and one at each commissure.

The patient was submitted to a prolonged course of alterative treatment, consisting principally in the exhibition of *hydr. cum cretâ* at bed-time, with a dose of the compound decoction of sarsaparilla and iodide of potassium thrice daily; and the local use of the nitrate of silver. The health was not perfectly restored until the end of three months, during which period the caustic was more than a dozen times applied.

Case XXXVII.

Abortion at three months; return of the symptoms in a succeeding pregnancy; fissured ulceration without perceptible discharge; miscarriage prevented.

M. L., thirty years of age, of the sanguine temperament, had a slight attack of flooding in the fourth month of her seventh pregnancy, for which my advice was solicited at the beginning of April, 1846. Her previous pregnancy terminated at three months, being preceded by hœmorrhage, which flowed in considerable quantity for four or five days before delivery. During the whole period of the present as of the previous pregnancy, she had suffered from violent pain of the sacrum about its middle part, pain of the perinœum and occasional tenesmus, constant aching of the loins and hypogastrium, and an impaired state of the general health. She had never had a leucorrhœal discharge of any kind or in any degree, nor was the least external evidence of it discoverable. Menstruation for several years past had been attended with much suffering. Six days before the date of my first interview, an escape of blood was noticed, coming on during a paroxysm of bearing-down, both which symptoms had gradually become aggravated, and she now had imminent threatenings of miscarriage.

The whole neck of the uterus was unusually large. Its lower part, anteriorly, was free from abrasion; but the posterior labium was considerably elongated, and divided, in the vicinity of the left commissure, by a deep fissure with hardened, excoriated boundaries, very painful to the touch. Immediately above and behind this was a tumour the size of a poulet's egg, apparently an off-growth from the lower part of the body of the uterus. This tumour, which was extremely painful on pressure, was lodged in the hollow of the sacrum, pressing upon the rectum and the sacral plexus of nerves; its pressure afforded a satisfactory explanation for certain symptoms described as being of a very distressing character, coming on whenever an effort was made to relieve the bowels. The presence of the speculum, however gently used, produced a great deal of suffering. The fissure

appeared to extend through a great portion of the cervix in an upward direction; a quantity of florid blood escaped from it during examination. No local measures were attempted while the parts remained in this state.

The treatment was commenced by the application of ten leeches to the *dorsum sacri,* and the administration, immediately afterwards, of five grains of *hydr. subm.* combined with two grains of opium. Sixteen hours afterwards, I found her perfectly free both from pain and hœmorrhage; she had slept only an hour or two, but had been perfectly tranquil since a short time after the leeching on the previous evening. An emulsion of castor oil containing thirty minims of tincture of opium was now administered in form of *enema;* the dose of *hydr. subm. cum opio* to be repeated at night. On the third day, she was still free from pain and hœmorrhage. The bowels not having acted, however, an ounce of castor oil was ordered to be taken, and the dose of opium, combined with two grains only of the mercurial, to be repeated at bed-time. On the fourth day, there was no bleeding or bearing-down, but considerable pain and a sense of smarting had been occasioned by the operation of the aperient. The cervix, now examined for the first time since the leeching, was materially reduced in size, the posterior labium was less tense and painful, and the adjacent tumor had shrunk nearly to a level with the body of the organ, presenting little more than a diffuse fulness, which, although still painful upon pressure, was much less so than formerly. Six more leeches were ordered to be applied to the sacrum, the opiate to be repeated at bed-time, and a dose of a mild saline aperient at intervals. On the seventh day, slight pain was produced by pressure of the speculum, but the parts were decidedly reduced in size, and less irritable; there was a little escape of blood from the fissure during examination, but not afterwards. Six more leeches were applied to the sacrum, the dose of *hydr. subm.*

cum opio was now reduced to a grain of each every night, and the saline continued as before.

On the tenth day from the first of the treatment, the system was decidedly under the influence of mercury, which was consequently discontinued. No defined elevation existed where the uterine tumor was first noticed, although there still remained a preternatural fulness in that part; there was no soreness, but pressure in this situation produced pain of the sacrum and along the sciatic nerves. The treatment, from this period, consisted in the free application of nitrate of silver to the whole surface of the posterior labium, within the fissure, and upon the adjoining cervix; in the exhibition of a sixteenth of a grain of *hydr. oxymur.* combined with four grains of *extract. cinchon.* twice daily, and an aperient when required. An escar separated from the cauterized parts on the third day, after which a plentiful muco-purulent secretion was established: the application was repeated every fifth or sixth day afterwards. At the end of the sixth month of pregnancy, no perceptible induration remained in any part of the cervix, nor was the least pain produced by pressure; the ulcerated fissure was completely filled up, and there remained only a superficial, healthy-looking, granulating surface upon the posterior labium; this also became completely cicatrized six or seven weeks before delivery, which took place on the 8th of September, five months after the first report. The child, a female, was full-grown and healthy.

I consider the preceding case one of great interest and importance in the study of uterine pathology. It illustrates a condition which not unfrequently occurs in practice, but which is just as frequently overlooked or misunderstood. When deep-seated inflammation of the textures about the cervix prevails to any considerable extent, and is allowed for a length of time to continue unrelieved, interstitial fibrinous deposition takes place, and the lower portion of the uterus

consequently becomes, in a measure, disorganized. The circulating current, which, during pregnancy, is exceedingly active, is thrown immoderately upon other parts of the organ, resulting either in effusion of blood upon the ovum, or in venous congestion in other situations, both states being usually attended with equally disastrous results, although at different periods of the process. I should have regarded the tumor connected with the lower and back part of the body of the uterus, either as a malignant growth, or else as one of those formations of a fibrous character which are sometimes met with in the walls of the uterus, but which, so far as their history extends, are generally of a chronic nature, and unconnected with pregnancy. I believe, however, that it ought to be regarded as a state of local phlebitis, as I have both before and since, met with instances of a similar kind, which have readily yielded to treatment.

This case is further singular in presenting such an amount of disease, implicating, in a considerable degree, what may be considered as an exposed surface, which presented all the usual appearances of ulceration; but without the least evidence of the product of suppurative action. The following case exhibits this form of disease under a somewhat different aspect.

Case XXXVIII.

Abortion in three successive pregnancies; return of a symptom in the fourth pregnancy; fissured ulcer of the anterior labium; result, favourable.

M. F., twenty-nine years of age, of the bilious temperament, miscarried in the sixth month of her third pregnancy, on the 4th of November, 1845. Her previous pregnancies had each terminated in abortion at the end of the fourth month, before quickening. She was admitted an out-patient of the Lying-in Hospital three weeks after the occurrence of

her third abortion. She stated that she had been troubled with a yellow leucorrhœal discharge ever since a month or two after marriage: pregnancy did not take place until she had been married a year and a half. She had also suffered from severe pain of the left side of the abdomen near the groin, and from irritable bladder, with frequent and urgent calls for its evacuation: this had always been attributed to the "gravel complaint." Each abortion had been preceded, for several days, by hœmorrhage; and during her third pregnancy, menstruation had occurred, scantily, at the regular monthly periods. The posterior labium of the uterus was of the normal dimensions, and appeared healthy; the anterior was elongated, indurated, and deeply cleft by a fissure which extended within the *os*. The whole of its boundaries were excoriated, especially at their posterior aspect near the uterine orifice, and covered with yellow pus. She was prescribed for in the usual manner, but I did not again see her until the latter period of her following pregnancy.

On the 23rd of September, 1846, this patient again requested to be allowed the aid of the charity, believing that she was about to miscarry. She stated herself to be in the sixth month of her fourth pregnancy; that she had been in delicate health ever since her previous abortion; that she had menstruated at irregular intervals and in variable quantity during the whole of the present pregnancy; that the whole interval of each of these so called menstrual periods had been occupied by a thickish yellow discharge; and that since the last alleged menstrual accession, the sanguineous discharge had continued unabated, and undiminished in quantity, until the present time. The pain of the left groin had lately become very distressing, and she was unable to retain the urine more than half an hour or an hour at a time. She also complained of great languor, impairment of appetite, loss of rest, and constant aching

around the lower part of the person, with intermittent bearing-down.

By auscultation the child was discovered to be alive and vigorous. The whole cervix was greatly hypertrophied, and the anterior labium indurated, fissured, and excoriated as before described; sharp pressure upon this part increased the pain of the groin, and produced an uneasy sensation in the vesical region.

The treatment consisted in the application of eight leeches to the seat of the fixed pain in the left groin, the exhibition of a full dose of camphor and hyoscyamus every twelve hours, and the recumbent posture. On the fourth day, the coloured discharge had entirely ceased, but the pain of the groin being still present, although much less severe, eight more leeches were applied to the same part. The uterine affection remained in its former state: the internal treatment, as at first prescribed, to be continued. On the seventh day, she was entirely free from pain, and the coloured discharge was still absent. The anterior labium uteri, which was now entirely free from irritation on touch, was completely covered with the solid nitrate of silver, and the former remedies ordered to be continued. On the twelfth day she expressed herself quite well. The anterior labium, however, was still indurated; the cauterized layer had separated, and produced a granulating surface over the entire extent to which the remedy had been applied: the fissure was much less distinct.

From this date I heard no more of the patient until the 2nd of January, 1847, when her infant, six days' old, was brought to me, labouring under purulent ophthalmia in a very aggravated form. The affection had been first observed on the second day after delivery, and had been treated, at one time by bathing the eyes with breast-milk, at another by the application of the mother's urine, — an absurd custom

extensively prevalent among the lower orders of society in these districts. The nitrate of silver was freely applied to the inside of the lower eyelids; but the mischief had already proceeded to such an extent, that when the little patient was brought on the following day, the cornea of the right eye had completely sloughed, the humors escaping upon the eyelids being separated. The other eye was restored.

The preceding cases — of which kind a multitude might be adduced — go to substantiate the propositions previously advanced, namely: —

1. That fissurated ulcer of the cervix uteri constitutes a powerful predisposing, as well as a very common exciting cause of abortion.

2. That ulcerative disease of the cervix is a common cause of uterine hœmorrhage, both during pregnancy and after delivery.

3. That the phenomena of *menstruation during pregnancy* may be periodically developed without the co-operation of that part of the organ which is naturally adapted to the discharge of this function under normal circumstances.

4. That the product of uterine disease, in some conditions at least, possesses virulent properties.

5. That caustic and other applications to the uterus during pregnancy may not only be practised with impunity, — due attention being paid to the state of the system, — but that, in many instances, they are absolutely necessary, as well to the safety and comfort of the mother, as the preservation and health of the ovum.

It was intimated that abortion, connected with the fissurated form of ulcer, commonly happened about the middle periods of pregnancy: it appears, however, that these events observe a somewhat extended range. The following statement represents four stages of pregnancy at which abortion occurred, or was imminently threatened, under these conditions, in fifty

instanees, the majority of which had an unfavourable termination. In some, miscarriage had previously oceurred, and appeared again to be impending; and in others the threatening symptoms prevailed for the first time: —

9	cases	happened	at from 11 to 14	weeks.
17	„	„	15 to 20	„
19	„	„	21 to 30	„
5	„	„	31 to 37	„

5. *Induration of the Cervix Uteri.*

The form of disease known by this appellation, as usually met with, is a chronic affection, the result of previous, deep-seated inflammation — a species of prolonged metritis. It consists in an increase of volume and density of the part affected, caused by interstitial deposition of the fibrinous parts of the blood, which, becoming organized, appear at length to constitute an integral portion of the proper tissue of the part of the organ implicated. Besides the slighter forms of inflammatory, or of what might be ealled, aeeessory induration, noticed as being associated with common inflammation, superficial erosion, and the fissurated uleer; I have met with seven cases of chronic induration during pregnancy, in only two of which treatment was effeetual in averting abortion. All these individuals had previously aborted; three of them, ineluding the two just mentioned, I myself attended in the preceding instances, in all whieh the same form of disease at that time existed; and in the remaining four the affection, it is highly probable, had long before existed. The sum of their abortions was 19; the average age of the patients, 31 years.

In four of the above cases the disease occupied the anterior labium only; in one it was confined to the posterior; and in two, both labia were alike affeeted. In all, the hardness implicated the corresponding part of the cervix, almost through its entire extent. When the anterior labium alone

is indurated, the part presents the appearance of a hard, conical substance, sufficiently large, generally speaking, to occupy the whole orifice of the largest sized speculum; the os, situated behind and high up, being with difficulty brought into view. When both labia are similarly circumstanced, they present a *mitral* appearance, very much resembling the top of the piece representing the bishop used in the game of chess. Their opposing surfaces are often inflamed, having an excoriated or granular aspect, and the commissure of one or both sides, situated at the base of the cones, is generally a deep, ulcerated fissure, exuding pus. A similar condition of parts is observed when the disease involves one labium only; its inner surface, at the part where it forms a portion of the boundary of the *os*, being almost constantly abraded. This form of disease usually occasions abortion before the end of the fifth month, although it may occur considerably later.

The symptoms indicating the existence of chronic induration of the cervix, are very characteristic. A painful sense of constriction around the pelvis and hips is almost constantly present; a dull, fixed, aching pain of one or both inguinal regions; irritability of the bladder and rectum; pain in the region of the sciatic nerves; a highly excited state of the whole nervous system; lassitude; disordered digestion; and a deranged state of the general health. Menstruation is performed in individuals thus affected, with great suffering; this state of parts being sometimes a cause of a very painful form of dysmenorrhœa. It is needless to add that induration may also act as a cause of repeated, or what is called habitual abortion.

Case XXXIX.

Three abortions in the seventh, sixth, and fifth months of pregnancy respectively; chronic induration of anterior labium; cure.

H. H., thirty-two years of age, of the strumous diathesis,

aborted in the fifth month of her seventh pregnancy, a fortnight after quickening, on the 16th of February, 1846. Her first four pregnancies terminated successfully. During the puerperal period of the last of these, she received a severe cold from imprudent exposure to the weather on the sixth day after delivery. The consequence was, a violent attaek of abdominal inflammation, which was treated by local bleeding and other remedies. Her recovery was protraeted, and incomplete. A leucorrhœal discharge, to whieh she had been oecasionally subject sinee marriage, came on in an aggravated degree during convalescence; it was of a deep yellow, sometimes of a brownish eolour, and at the onset, offensive; and was attended with severe hypogastric and lumbar pain. This affection continued, in varying degrees of severity, always afterwards. She miscarried in her fifth pregnancy at the end of the seventh month, and in her sixth a month earlier.

During the early part of the present, her seventh pregnancy, she was in very delicate health; having a constant leucorrhœal discharge, which was sometimes of a yellow eolour, sometimes lighter, and of a glairy consistence,—with violent aching of the loins; a fixed, deep-seated pain in each inguinal region; frequent desire to void the urine, which was seanty and high-eoloured; and oecasional attaeks of palpitation.

On the 31st of January, the fœtal movements were first perceived, and in the course of the following night, she had an attack of intermittent, bearing-down pain, similar to that of labour, accompanied with flooding. The hœmorrhage was in considerable quantity and the pains severe twelve hours afterwards, on the occasion of my first visit. The cervix uteri was exeeedingly hard and enlarged, and was situated unusually low in the vagina, considering the stage at which utero-gestation had then arrived. It was of a eonical form, at

the apex of which I at first expected to find the orifice of the uterus; this was soon detected, however, more than an inch higher up, and posteriorly. On introducing a large-sized speculum, this indurated cone, which was the anterior labium, completely filled the upper aperture of the instrument; it presented a grey, glistening surface, except at its posterior aspect, which was excoriated and of a vivid redness. By readjusting the instrument, the excoriation was seen to extend within the os uteri, involving, to some extent, the other labium, which was comparatively small and less firm. A deep ulcerated fissure occupied the left commissure, and a shallower chink was seen on the opposite side, from both which, blood was freely exuding; no fluid whatever escaped from the *os*.

The treatment consisted in the immediate application of a pledget of lint saturated with a strong solution of sulphate of zinc, (two drams of the salt dissolved in an ounce of water,) combined with tincture of opium, to the abraded surfaces; this remedy, which was allowed to remain upon the part, was daily renewed for several days in succession. Depletion was not indicated. Two grains of opium combined with five of *hydr. subm.* were given at bed-time, and the recumbent posture was ordered to be strictly maintained. The hœmorrhage was arrested from the first, but returned, although in very small quantity, upon ceasing to use the astringent application on the sixth day. The movements of the fœtus were feebly felt two or three days after quickening, and then ceased. She aborted on the seventeenth day.

The after-treatment involved a long and tedious process, being continued more than three months. It consisted in a mild alterative and tonic plan, and the repeated application of caustics to the indurated cervix. The solid nitrate of silver was at first freely applied; but finding that very little impression was made upon the disease by this remedy, the acid

nitrate of mercury was substituted. A moderately thick slough was formed by the first application which, on the sixth day, was found to have separated, leaving a bright red surface, and the parts were somewhat reduced in size. The same remedy was at this time repeated, and also a third time after the lapse of a similar interval, when — the parts being considerably diminished in bulk, and a free suppurative action set up — the nitrate of silver was again had recourse to. The cervix was restored to its normal dimensions, the surfaces were healed, and the health greatly improved, at the end of fifteen weeks from the time of the abortion: the patient expressing herself better in health than she had been for five years. Menstruation occurred twice during the treatment, a considerable portion of the discharge escaping from the ulcerated surfaces on each occasion.

This patient applied to me at the beginning of May, 1847, praying for an order of admission to the privileges of the Lying-in Hospital during her approaching *accouchement*, her circumstances having been, in common with others, impoverished during the past season of dearth and want of employment. She was eight months advanced in her eighth pregnancy, and had enjoyed excellent health ever since the previous treatment.

6. *Endo-uteritis.*

The form of disease now proposed for consideration is one of a strictly local character, of every-day occurrence, and very amenable to treatment. It nevertheless acts as a common cause of abortion during the early months of pregnancy; and it constitutes, in the majority of instances, the pathology of that species of disordered or difficult menstruation known as dysmenorrhœa. It does not occur as a necessary consequence, however, that dysmenorrhœa, as commonly witnessed in early life, indicates the existence of a condition likely to create an

inaptitude for child-bearing afterwards; on the contrary, the symptoms in the virgin are often of a purely nervous, or what is understood in common parlance, of an hysterical character, unaccompanied with inflammatory action, and they frequently undergo complete cure by marriage: an instance of which is given in Case XVI., illustrative of the article on this subject.

Endo-uteritis is a term employed to signify inflammation of the lining membrane of the uterus. The affection sometimes implicates the cavity of the cervix, or that of the lower part of the organ only; at other times the whole lining membrane is involved, and it not unfrequently extends within the Fallopian canals to their outer extremities. The inflammation is generally of a chronic, although of a very irritable character; and under certain states of excitement, as febrile irritation resulting from the application of cold, or of accidental violence; inordinate venereal indulgence; the action of the gonorrhœal or syphilitic virus, &c.; the deeper textures of the uterus and neighbouring organs may be seriously implicated.

Its anatomical characters are similar to those of other mucous tissues under like circumstances. It rarely exists, perhaps, in a sufficient degree of severity to occasion a fatal issue, uncomplicated with other disease; but it is frequently noticed as a concomitant condition of general *metritis*, uterine *phlebitis*, inflammation of the uterine lymphatics, *metroperitonitis*, gangrenous inflammation, *ramollissement*, disease of the Fallopian tubes or of the ovaries, and the various forms of fatal puerperal and other similar affections. I inspected the body of a woman thirty-five years of age, mother of one child, who died of asthma and cardiac disease, in December, 1845. She had been a martyr to dysmenorrhœa several years. About three days before each menstrual accession, she generally experienced a violent shivering, which

was followed by heetic fever, and the recurrenee of rigors eontinued several times a day, until the menses had eommeneed freely to flow, after whieh, the febrile symptoms gradually subsided. She had for several years been subjeet to leueorrhœa, whieh usually oecupied the whole of eaeh menstrual interval; the diseharge being a thin, brownish, or sanious fluid; but sometimes it was thieker, and of a greenish yellow eolour, and always appeared in inereased abundanee previous to the menstrual periods. The body of the uterus was a little enlarged; the eervix eonsiderably elongated; the labia were expanded and elub-shaped, exeeeding in their eireumferenee the part of the eervix immediately above them, their whole surface being eompletely oeeupied by granulations. The lining membrane of the uterus was soft, turgid, injeeted, of a grey eolour, and the whole surfaee was studded with raised, spongy tufts, of different sizes, in the form of greyish-looking granulations. The internal surface of the eervix was peeuliarly soft and pulpy. During life, the discharge emitted, on some occasions, a peeuliarly fœtid odour.

The symptoms of endo-uteritis are, distension of the hypogastrium, accompanied with a eonstant, deep-seated aching behind the pubis; irritable bladder; pain of the loins, of the inguinal regions, and of one or both sides of the abdomen on a level with the umbilieus; languor; irritative fever; and vaginal diseharge. The whole uterus is often found in a state of inflammatory hypertrophy, and, unlike the affections previously noticed, is extremely painful upon pressure, espeeially at the *back part of its body*, where it impinges upon the reetum. The eervix is hard and less sensitive, but slight sueeussion made upon this part developes a painful sensation about the inguinal or umbilieal regions, or aeross the loins. Examined with the speeulum, the labia present a tense, glistening appearanee, and a ring of vivid redness surrounds the orifiee; this, in some cases, is seen to extend upon the surfaee

of the *posterior* lip. Sometimes one or both labia are excoriated, eroded, or fissured.

Endo-uteritis is occasionally met with in a much less painful form than the preceding; the organ being free from tenderness upon pressure, the constitutional disturbance less acute, and the symptoms are altogether of a milder character. The discharge, however, is equally profuse, and possesses the same sensible properties; the labia are softer, sometimes flabby, their opposing surfaces, which generally remain in contact, or nearly so, presenting a wavy or fringed appearance, with sharp margins, turned slightly inwards, and having a bright red, granular aspect. The first or more acute form of the complaint is met with during the first months of pregnancy, or immediately before or after menstruation, when the disease attacks the unimpregnated; the latter supervenes upon the former, and is generally seen a week or two after the occurrence of abortion, or after delivery, in cases where the process has attained the full period.

Accumulation of air within the uterus is a condition frequently accompanying inflammation of its lining membrane. It is commonly discharged in the form of bubbles, which may often be seen to form and burst in rapid succession during specular inquiry. There is reason to believe that it sometimes collects in considerable quantity, causing great suffering, by distension of the uterine walls, and being expelled by sudden contraction of the organ, accompanied with severe forcing pains like those of labour. Generally speaking, it emits an offensive odour, owing in most instances, probably, to decomposition of the small coagula liable to be retained after menstruation, or which may also be thrown out at other times. It may possibly be, on some occasions, the product of secretion.

Endo-uteritis is generally first noticed during pregnancy, coming on after exposure to cold, or as a consequence of

fatigue, violent efforts, luxurious living, anxiety, sexual indulgence, and the like. It is sometimes the result of abortion induced by accidental violence, of difficult labours, especially such as necessitate instrumental interference, and of imprudent practices during the puerperal period. It sometimes manifests itself at the time corresponding to the next monthly period after conception has taken place, the usual premonitory symptoms of menstruation being developed, but unaccompanied by catamenial discharge. If leucorrhœa have previously existed, this secretion becomes for the time, augmented, and may continue in undiminished quantity afterwards. Severe aching of the loins and hypogastrium is experienced, accompanied with rigors, irritative fever, loss of rest, &c.; and at some indefinite period subsequently, on the application of an exciting cause, perhaps of a very trivial nature, hœmorrhage comes on, and the process is at once determined. It is not always that pregnancy is suspected to exist under these circumstances; the escape of clots of blood and of mole growths, being looked upon as the result of disordered or deferred menstruation, are consequently seldom submitted to examination; the phenomena are often allowed to be repeated, at intervals, for years; the case being regarded as irremediable, or not suited for ordinary medical experience. The ovum thus early thrown off exhibits itself in the state of what is commonly called the apoplectic mole, retaining still its isolated condition; its implantation upon the decidual surface having been prevented by the diseased condition of that newly-formed structure. When expulsion takes place during the third month of pregnancy, the ovum is generally detached with its envelopes entire; and the unshapely mass which the product thus exhibits, constitutes what is vulgarly denominated a "false conception." In the latter, as in the preceding case, abortion is caused by any inflamed state of the inner surface of the uterus, resulting in an imperfectly

organized condition of that portion of the decidual membrane which is contiguously situated. Utero-gestation, however, may be continued to its full term, although the inner surface of the uterus remain in a state of chronic inflammation the whole time; but the process is accompanied with great suffering, and likely to be frequently endangered. The decidual membrane is generally found greatly thickened, tufted, vascular, and not unfrequently exhibits appearances of recent inflammatory action; and the placenta is interspersed with fibrinous deposits.

The treatment consists in local or general bleeding, regulated according to the strength of the patient, and the urgency of the symptoms; in the exhibition of alterative and soothing medicines; and in injections within the uterus, when unimpregnated. The mode of administering this latter plan of treatment has been already intimated at page 163 of this work.

Case XL.

Six abortions in succession, occurring in the second and third months of pregnancy; endo-uteritis; cure.

Mrs. B., a lady in respectable circumstances, aged twenty-nine, of the sanguine-bilious temperament, was married at twenty-two years of age, having previously enjoyed good health. During the early part of her first pregnancy she had an attack of inflammation of the bowels — (metro-peritonitis most probably;) and, during convalescence, a yellow leucorrhœal discharge came on, which has continued ever since. The child had purulent ophthalmia, which ended in loss of sight of one eye; it died aged nine weeks. Her second pregnancy was attended with much suffering, and frequent threatenings of abortion. The child, born at the full term of utero-gestation, had purulent ophthalmia, from which it recovered, and is now living. Her third pregnancy termi-

natcd at three months; hcr fourth, fifth, sixth, seventh, and eighth, in thc seventh or eighth week of thc proccss, without assignable causc; thc circumstances being similar in all the instances, and the attendant phenomena exhibiting the same characters in cach case respectively. These six abortions occurred in the space of three years.

When not prcgnant, she menstruatcd monthly; the discharge, which was in considerable abundancc, sometimes clotted, and continuing six or scven days cach time, being preceded by augmentation of the leucorrhœal secretion, violent lumbar and hypogastric pains, bearing-down, palpitation, nausca and vomiting, rigors, and irritative fever. During the existence of prcgnancy, menstruation was suspendcd, but the suffering became increased. Each abortion was preceded for several days by uterine hœmorrhage, which often passed away in clots, accompanied with violent bearing-down pain of an intermittent character. A distinctly-formed substance, regarded as the product of a "false conception," was expelled on each of these occasions.

I first saw this patient on the 10th of February, 1847, the day after her sixth abortion. Since her delivery on the previous day, she had been perfectly free from labour-pain. The substance produced as the product of conccption, was partially envelopcd in coagula, which, bcing cleared away by washing in water, appeared as a globular, tufted mass, about the size of a large walnut; the tufts, which werc thosc of the chorion, were equally perfect on all sidcs, showing that its implantation upon the decidual surface had not been effected. This enclosed a cell nucleus containing the ovum, which had acquired thc size of a large orange pippin. The hœmorrhage had becn considerable, and was still flowing. The body of the uterus was large, and painful upon slight pressure; the cervix thickcned and elongated, and the labia were pouting and unusually firm. Specular cxamination was not at this time attempted. The

treatment, during the first few days, consisted in the exhibition of a cooling saline aperient at intervals, and of two grains of opium combined with the same quantity of *hydr. subm.* at bed-time.

A fortnight afterwards, the patient expressed herself as being in about the same condition as she had been at a corresponding period after her previous abortions. She was exceedingly pale, languid, alternately chilly and feverish, without relish for food, unable to sleep, and complained of constant aching of the loins and hypogastrium, a fixed pain of the right side of the abdomen, below the level of the umbilicus, and "inward piles," the voidance of the fœces being attended with considerable suffering. The body and cervix of the uterus were still large, hard, and painful to the touch. The labia, on being viewed through the speculum, presented a tense, glistening aspect; their opposing surfaces were of a vivid redness, as if erysipelatous, and this appeared still more intense within the orifice, from which exuded a quantity of a thin, brown sanies, emitting an offensive odour.

The treatment consisted in repeated small bleedings from the sacral and inguinal regions alternately, at intervals of four or five days; in the exhibition of five grains of the Cinchona extract combined with an eighth of a grain of *hydr. oxym.* twice daily, an occasional opiate at bed-time, and a dose of *decoct. sarsæ co.* three times a-day. The weak solution of nitrate of silver was twice injected within the uterus in the manner recommended at page 163. In from three to four weeks, she was quite free from pain; the uterus appeared to have subsided to its normal dimensions, and was no longer irritable under pressure; the discharge had entirely ceased; and the general health was remarkably improved. She menstruated during the last week in March, and again at the end of April; being, on the last occasion, entirely free from all feeling of discomfort or inconvenience.

7. *Follicular ulceration.*

Inflammation and ulceration of the Nabothean follicles is occasionally seen to accompany any of the morbid conditions already noticed: it is most frequently met with, however, in a distinct form, in simple inflammatory hypertrophy of the cervix; but whether as a primary affection, or merely as the result of the surrounding vascular excitement, I have had no means of ascertaining. Upon first viewing the part, it appears to be studded with a number of raised, circular spots, having the dimensions of small peas, covered with a white crust, the surrounding surface being of a reddish hue. This white pellicle is easily removed by means of lint, exposing a surface of the same form and size, slightly elevated, and appearing as if composed of a number of extremely minute granules. The parts are not painful to the touch.

When witnessed in the above form, the spots are numerous, from ten to twenty being visible at one view. But on some occasions not more than one or two are seen; and I have sometimes witnessed them, under the latter circumstances, to become very prominent and callous, assuming after a time, a warty appearance. This change very probably arises from specific causes.

In cases of induration of the cervix occurring in cachectic habits, the follicles are liable to inflame and suppurate in considerable numbers, leaving as many small circular cavities, which give to the part a worm-eaten appearance. If the suppurative action should continue to extend, two or more of the orifices may coalesce, forming a deep, irregularly-shaped excavation, with callous, overhanging margins; this probably constitutes, on some occasions, the commencement of what has been described as the corroding ulcer, an example of which was given at page 177. In œdema of the cervix, the whole surface is sometimes studded with small, follicular

points, the size of the heads of pins; they are perceptibly elevated above the general surface, and feel, upon tactile examination, as if slightly indurated; but are insensible to pressure.

The causes of these appearances have not hitherto, so far as I know, been satisfactorily explained. Indeed, the true anatomical structure and functions of the Nabothean follicles, seem to be so imperfectly understood, that it may be difficult to refer their diseases to any agency in particular. They are constantly spoken of by writers as secreting organs, destined to furnish a fluid for the purpose of lubricating the cervix uteri and upper part of the vagina; the paucity or abnormal abundance of this product is consequently often considered to depend upon the state of the so-called cervical glands: hence their diseased condition is confidently referred to as constituting the pathology of leucorrhœal affections. Any share which they may have in the development of these phænomena, however, is almost, if not altogether disproved by the fact, that in by far the majority of the worst cases of leucorrhœa, however abundant the discharge may be, and whether exhibiting mucous or purulent characters, these small bodies are not seen at all, nor can they, in many instances be found, however carefully sought for. And, on the other hand, it generally happens, that in cases where the follicles are found to be morbidly developed, the adjoining parts being at the same time free from abrasion, the discharge is often exceedingly scanty, and not purulent.

That the follicular bodies in question do occasionally emit a fluid, however, there is no doubt; but whether this is furnished in the manner of a regular glandular secretion, serving the purposes which have been assigned to it, admits of doubt. I have strong reasons for believing that their function is intimately, if not solely concerned in the phenomena of the venereal orgasm. The part upon which they are

situated is closely associated, by nervous intervention, with the ovaries, as shown by Dr. R. Lee; and it is extremely probable that the organic action in both is awakened simultaneously, and that the function of the one is never discharged independently of that of the other.

From observations of my own, as well as from those of others, I have been led to regard the Nabothean bodies as consisting, anatomically, of an erectile tissue, inclosing a number of cells or tubes, which probably have a fasicular arrangement, and are highly organised. After the escape of their contents, the accumulation and emission of which appear to be but a momentary act, they immediately collapse and disappear from view: hence the difficulty of detecting them, whether before or after death, when free from disease.

The remedial measures to be adopted in the treatment of follicular ulceration, will be similar to those already recommended in the various forms of disease with which it is usually associated: the details must be regulated according to the extent to which the surrounding structures appear to be implicated, to the temperament of the individual, and existing state of the constitution.

8. *Gonorrhœal inflammation of the uterus.*

Gonorrhœa in the female is much more frequently an affection of the uterus than of the vagina. This, although totally at variance with the opinions hitherto entertained, is nevertheless what might reasonably have been anticipated. In the first place, the gonorrhœal virus, from physiological causes, is liable to be carried immediately to the highest part of the canal, and forcibly projected upon the lower extremity of the uterus, which organ also, at this juncture, is in a state eminently calculated speedily to absorb it; in the second place, the normal secretion of the vagina possesses properties which are capable, to a certain extent, of destroying, or of materially modifying

the virulency of the morbid product, and of thus protecting the vaginal surface from its immediate influence The urethral orifice, however, seems to be provided with this means of protection in a much less perfect degree, and is, therefore, more highly susceptible of the action of specific inoculation. In nine unimpregnated women afflicted with gonorrhœa, seven had inflammation, with abrasion of the labia uteri, and in the remaining two, the inflammatory action was confined to the vaginal surface; the parts beneath the arch of the pubis being most severely affected: in one of these the urethral orifice was also involved.

The first change operated upon the uterus after gonorrhœal inoculation, consists in superficial inflammation of one or both labia at their most depending part, or at the boundary of the os and commencement of the internal cervix. The inflammation seems to affect principally the small mucous follicles with which the surface is closely studded — (probably not the Nabothean bodies already noticed). A small red patch is first perceived; sometimes there are two or three isolated spots which extend and soon run together, forming one patch, of variable size in different cases and in different stages of the complaint, and generally of irregular shape. On removing the thick secretion with which this is covered, the surface appears to consist of minute granules, equally dispersed over every part of it; the abrasion is bounded by a margin not very distinctly defined, running imperceptibly into the erysipelatous redness which surrounds the sore; this extends to some distance upon the cervix, the whole of which is more or less tumid, but not painful to the touch.

In persons possessing the sanguine or bilious temperament, and of plethoric habit of body, the symptoms are often violent; the excoriation extending rapidly, on the one hand upon the cervix in an outward direction, and on the other towards its lining membrane; the part upon which the erosion appears, first assumes the form of an angry, irritable ulcer, throwing off

a large quantity of pus, and there is great tendeney to inflammatory fever. If the infection be contracted during pregnaney, the process of utero-gestation is often endangered during the aeute stage of the complaint, especially in those of a nervous and irritable frame, in whom hysterieal symptoms are readily developed. The inflammatory aetion in gonorrhœa, is extremely liable to extend within the uterus, and is probably a frequent eause of chronie endo-uteritis — one of the most serious and troublesome conditions of which the womb is susceptible. After the acute symptoms have subsided, the local disturbance becomes less diffuse; the erosion assumes the eharacter of a simple granulating sore, situated upon an inflamed, indurated crust, and having a defined margin, whieh is manifestly elevated above the general surfaee. In this state the disease may continue for many years; rendering the whole of each succeeding pregnancy a period of suffering and misery, in many instances oceasioning abortion at different stages of the process; sometimes it effectually prevents the aeeomplishment of impregnation, and it is not an uneommon cause of dysmenorrhœa. The symptoms are always aggravated during pregnancy; the inflammation involving the deeper textures of the cervix, and resulting in interstitial deposit, and consequent induration. After delivery, whether at the full term or prematurely, the uleeration is often found to have assumed the fissured variety.

It is my opinion that gonorrhœal affections in the female are very rarely perfectly eured. In a vast proportion of the eases of simple erosion, of the fissurated uleer, as well as of inflammation of the deeper seated textures, met with in the eourse of these investigations, the origin of the complaint was attributed by the patient to the "bad disorder." Many of them asserted also, that they underwent a eourse of treatment at the time, similar to that adopted in the husband's case, and that their complaints were eonsidered as having been perfectly cured. Nevertheless, they had ever sinee been troubled with

the same kind of discharge that appeared for the first time at the period in question, together with the train of sympathetic disturbances commonly indicative of the presence of uterine disease. In some instances, the complaint had been contracted during the existing pregnancy; in others, the date of its commencement was several years anteriorly. One patient, forty-five years of age, labouring under disordered menstruation and purulent leucorrhœa, had been, from time to time, a patient of first one, then another of the hospitals, and frequently under the treatment of private practitioners for the "whites," during a period of more than twenty years. She contracted a gonorrhœa from her husband shortly after marriage in her twenty-second year, for which she was under treatment at that time three or four months; her complaint was considered as perfectly cured, although the yellow discharge did not cease, but was present ever afterwards, except during the menstrual terms. She miscarried of her first pregnancy before the period of quickening, and had subsequently several "false conceptions," which were not looked upon as pregnancies. In all, according to her own reckoning, she had had fourteen pregnancies, seven of which terminated at, or within, six or eight weeks of the full period. The children, in all of these instances, were born alive; but all died emaciated in infancy, several of them having had purulent ophthalmia. The rest were abortions, in the sixth month of pregnancy. I found the cervix uteri deeply fissured and indurated, the labia excoriated; and there was an abundant muco-purulent discharge, with great constitutional disturbance. She was more than five months under treatment, during which time the system was once brought under the influence of mercury, and she took, during the whole of this period, the compound decoction of sarsaparilla, combined with iodide of potassium. Her ultimate recovery was most satisfactory.

There is no doubt that the scientific principles of treatment of gonorrhœal affections in women, are greatly misapprehended. This is the natural result of a mistaken idea respecting the seat of the disease. Writers of the highest authority, including Hunter, Cooper, Howship, Swediaur, as well as those of more recent date, have considered it as affecting the urethra, Cowper's glands, the vulva, and the external genitals principally; while few have directed attention to its effects upon the uterus. I have seen no small number of cases of this disease, and have almost invariably found the lower part of the uterus inflamed or ulcerated; where the urethra or the adjacent structures have been involved, the affection of these parts has been proved to be of secondary character, resulting from a transfer of the morbid product from the seat of the primary inoculation — the uterus. I invariably treat them, wherever convenient, with nitrate of silver applied through the speculum, of which three or four applications are generally sufficent to effect a cure.

Females affected with gonorrhœa seldom present themselves for treatment during the acute stage of the complaint: constitutional measures are therefore not always found necessary. Sometimes, however, especially during pregnancy, and in strong, plethoric women, there may be a high degree of excitement, and symptoms of inflammatory fever. In such cases, local measures should never be adopted until the system has been completely tranquillized by means of bleeding, aperients, emollients, rest, and a mild diet. One of the most suitable aperients is sulphate of magnesia dissolved in an ample proportion of mucilage, linseed infusion, or decoction of marsh mallows, and containing from five to ten grains of nitrate of potass in each dose. The ordinary beverage should consist of linseed infusion, or marsh mallows decoction, to which may be added a cooling saline, as necessity may require. The local applications should consist of the nitrate of

silver, either solid or in form of strong solution; the solution of sulphate of zinc, of alum, or of chloride of lime, applied either by the practitioner or the patient herself. Injections are of very little service. Generally speaking, they seldom reach the part affected, and even if they were to do so, they would scarcely effect so much as to wash away the coating of muco-purulent matter with which the morbid surface is covered, and consequently never arrive in reality at the diseased part. And under any circumstances, they cannot be employed of sufficient strength to accomplish any good, on account of the irritation which, in a more concentrated form, they would produce upon the highly sensitive parts about the vulva, with which the liquid is unavoidably brought into contact as it escapes outwardly.

When the solid nitrate is judged advisable in preference to its solution, the application should always be made by the practitioner; but any of the other remedies may be safely and efficiently managed by the patient herself, with the aid of the *Prolapsus tube*. The manner of applying the strong solutions of the articles just mentioned, is by means of the lint tent as already explained. If carefully managed, none of the liquid will descend to the external orifice, nor any inconvenience whatever be experienced therefrom. When the external parts become irritated or inflamed, the *Lotio plumbi* and other similarly soothing applications will be found to afford considerable relief. The same directions apply equally to diseases occurring during pregnancy and under other conditions. I deem it unnecessary to dwell upon the use of those remedies generally considered as possessing specific virtues in gonorrhœal affections, such as the balsams, the *Piperitæ*, &c. They are, doubtless, of service under some circumstances; but medical men are still much at variance in opinion respecting their alleged efficacy.

9. *Syphilis.*

I regret that the particulars of a greater number of cases of syphilitic disease than are at present available, have not been preserved out of the numbers that were brought under treatment. The fact is, during a period of more than twelve months after the commencement of these inquiries, the complaint in question was not suspected of being so frequent a cause of abortion as it has since appeared to be; nor did it, until very recently, engage a particular share of attention. I remember that it was the opinion of my lamented and eminent friend the late Mr. Fawdington, that abortion, in a great proportion of cases, was occasioned by a condition induced by the venereal taint. I am not acquainted with the nature or extent of the data upon which such belief was founded; but I have no doubt of its being the offspring of observation, as it was always spoken of with confidence. This suggestion, however, did not occur to me until engaged in collecting the present cases for the purpose of publication.

The accompanying table exhibits an abstract of the histories of twenty-eight out of a considerable number of cases marked syphilitical, in all which, the prevalence of the venereal taint was indisputably manifest, either in the parent or the offspring or both; the remainder have been left unnoticed, in consequence of a want of completeness in the details.

The primary venereal sore is very rarely seen attacking the lower part of the uterus. Doubtless, the reason is, because the virus is not likely to be carried so high up, except in instances, comparatively few, of orificial or urethral chancre in the male. I have seen but one case of this kind — No. 7 in the table; the husband had orificial chancre of primary character, together with gonorrhœa, which were contracted about three months after marriage. I did not see the patient until about the same length of time after the receipt of the infection;

TABLE XII. — *Syphilitic Cases.*

No.	Age.	Duration of disease.	No. of pregnancies since the invasion of the symptoms.				No. of children affected with sec. symptoms.	Date of first appearance of the symptoms.	No. living at the end of		State of the maternal organs when first examined.		
			Still births.		Live births.						External parts.	Internal parts.	Character of the discharge.
			Before 6 mo.	After 6 mo.	Premature.	At full term.			1 mo.	6 mo.			
1	24	5 mo.	...	...	...	1	1	10th day	...	1	Prim. sores.	Cervix excoriated.	Purulent.
2	32	11 yrs.	2	6	1	...	1	2nd day	0	0	.....	Induration—granulating ulcer of inner cervix. ...	Muco-pur.
3	37	2¼ yrs.	1	...	...	1	1	16th day	1	0	.....	Induration of cervix—surfaces mottled—endo-uteritis.....	Muco-pur.
4	33	16 yrs.	...	...	...	1	1	12th day	1	...	.....	Slight induration—endo-cervicitis.*	Muco-pur.
5	21	1½ yrs.	1	1	...	...	...	.....	0	0	.....	Two circumscribed secondary chancres on cervix.	Purulent.
6	32	6 yrs.	2	...	...	1	1	3rd week	1	...	.....	Cervix indurated and mottled—endo-cervicitis...	Muco-pur.
7	19	6 mo.	...	...	...	1	1	6th day.....	1	...	.....	Primary chancre around the os uteri.....	Purulent.
8	32	17 yrs.	...	...	...	1	...	2nd week.....	1	...	.....	Cervix patchy—endo-cervicitis—vagina warty. ...	Muco-pur.
9	35	2 yrs.	Has not since been pregnant.					.....	...	...	.....	Endo-cervicitis.....	Sanio-sang.
10	32	3 yrs.	...	...	1	...	1	4th week	1	1	.....	Endo-cervicitis—posterior lab. worm-eaten—anterior warty.....	Puri-sang.
11	24	3½ yrs.	1	...	...	1	1	7th day	1	0	.....	Cervix mottled—vagina warty.	Sanious.
12	30	9 yrs.	...	1	...	3	3	7th to 16th day	3	2	Chan. bubo.	Cervix dark red and aphthous.	Muco-pur.
13	31	10 yrs.	...	...	...	6	6	5th to 20th day	6	4	.....	Cervix hypertrophied and mottled—endo-cervicitis	Muco-pur.
14	24	4½ mo.	...	...	...	1	1	12th day	...	1	Prim. chan.	Simple erosion.....	Muco-pur.
15	26	5 yrs.	...	1	...	2	1	2 months.....	1	0	.....	Cervix mottled—endo-cervicitis.	Muco-pur.
16	30	12 yrs.	6	1	...	6	6	6 to 21 days ...	5	0	.....	Follicular ulceration—aphthæ—endo-cervicitis..	Sanio-pur.
17	37	9 yrs.	2	2	...	2	2	12th day	1	1	.....	Cervix aphthous and patchy—endo-cervicitis. ...	Sanio-pur.
18	37	5 yrs.	...	2	...	1	1	3rd week	1	1	.....	Endo-cervicitis	Muco-pur.
19	33	8 yrs.	1	3	...	1	1	5 weeks	1	0	.....	Cervix mottled—endo-cervicitis.	Muco-pur.
20	27	2 yrs.	1	...	...	...	...	.....	...	...	.....	Cervix hypertrophied and aphthous. Erosion...	Muco-pur.
21	23	3½ yrs.	..	2	...	1	1	2 months.....	1	...	.....	Endo-cervicitis	Muco-pur.
22	25	11 mo.	...	...	...	1	1	3rd day	1	0	.....	Cervix excoriated—endo-cervicitis.....	Muco-pur.
23	33	8 yrs.	2	1	2	2	4	6th to 14th day	3	0	.....	Cervix hypertrophied, mottled and aphthous. ...	Muco-pur.
24	28	5 yrs.	1	...	...	3	3	12th to 30th day	3	3	.....	Cervix large, dark-red, mottled—endo-cervicitis.	Muco-pur.
25	40	12 yrs.	2	...	1	...	...	.....	...	...	.....	Cervix indurated—three deep fissures.	Muco-pur.
26	26	3 yrs.	1	1	...	1	1	10th day	1	1	.....	Cervix large, dark-red, patchy; endo-cervicitis..	Muco-pur
27	32	4½ yrs.	1	2	...	1	0	.....	...	1	Sec. sores....	Cervix large, aphthous; endo-cervicitis.	Puri-sang.
28	39	9 yrs.	1	...	...	7	7	4th to 32nd day	5	1	.....	Cervix aphthous; labia fissured; endo-cervicitis.	Sanio-pur.

* I have adopted the word *endo-cervicitis* for the sake of brevity, to signify inflammation or ulceration of the inner or opposing surfaces of the labia uteri, extending in an upward direction within the cervix to a point beyond the reach of ordinary observation.

she was then labouring under secondary symptoms in the form of scaly eruptions on the face and chest, sore throat, and hoarseness, with a plentiful purulent discharge from the vagina. There had been no external sores. The ulcer, which occupied the boundaries of the orificium uteri to the extent of a sixpenny-piece, had lost its primary character, so far at least as the infecting power of the secretion was concerned, as no result was obtained by inoculation of the matter upon the skin; but it still retained the genuine chancrous appearance, having an excavated centre with raised over-hanging margins, and a yellow base.

Secondary syphilis, however, in the female, is of extremely common occurrence, and appears to have its origin in three different ways: —

1st. As an imperfectly cured primary affection, which originally presented itself in form of genuine chancre attacking the external genitals.

2ndly. As the result of virulent inoculation upon the lower part of the uterus, followed by the formation of a sore of primary character; but which, on account of the scanty supply of nerves which the uterus receives directly from the cerebro-spinal centre, and the low degree of sensibility which is consequently manifested therein under ordinary circumstances, is liable, both at the onset and altogether, to escape observation.

3rdly. As a consequence of secondary inoculation; the affection having lost its primary character in the first individual before being transplanted by contact upon another. The possibility of transference of the venereal taint under this form will probably be disputed.

In the observations to be offered upon the preceding propositions, and which shall be as briefly disposed of as may be consistent with a clear understanding of the meaning intended to be conveyed, I shall confine myself, in the first place, to the mere enumeration of those abnormal appearances which

the cervix uteri eommonly presents, as evidenees of the presence of syphilis in the system; and seeondly, to the relation of a few cases in illustration. The praetiee which has rather extensively prevailed of late years, founded on the belief, that the venereal poison is suseeptible of removal from the constitution without the aid of mereury, has doubtless been produetive of many disastrous consequenees. I am not unaequainted with the fact, however, that a great amount of mischief has also been produced by the ineautious and indiscriminate use of this drug, but I believe that the evil results of this practiee, not excluding the numerous instanees attributed to the unskilful management of ignorant pretenders, bear but a small proportion to the unfortunate cases wherein its employment has been altogether dispensed with, in the treatment of syphilis. Indeed, my firm persuasion is, that seience has not hitherto sueceeded in discovering an efficient substitute for mercury, and that we at present possess no other remedy so certainly capable of eradicating the venereal poison, after it has once been fairly introduced into the constitution.

The female system appears, upon superfieial observation, to suffer less severely from the effects of syphilis than that of the male. This seeming differenee in their relative susceptibilities, may be owing to the circumstanee, that the phenomena are very differently manifested in the two sexes respeetively; but it is not improbable, that when the subjeet shall have been submitted to a more rigid investigation, the state of the case will be found to be preeisely reversed;—the disease, in some instanees, eontinuing in aetive operation for years, where its existenee was not suspeeted, and the signs announcing its presenee, although sufficiently intelligible, having been altogether misinterpreted.

The highly organised state of the eutaneous and mueous tissues, together with the eircumstance of these being organs

upon whieh a large amount of the extraneous matter of the blood is eommonly deposited, are strong reasons why the surfaecs in question should so frequently be the seat of the syphilitie, as well as of some other morbid prineiples distributed through the body along with the eireulating current. This obscrvation is espeeially applieable in respeet to the male, in whom the venereal poision is extremely liable to appear, even at an early period of the complaint, upon various parts of the surface, and to exhibit itself under a variety of shapes, diversified by the nature of the eonstitutions upon whieh it is implanted; but, generally speaking, bearing sufficient evidenee, in every instance, of its specific origin. The female, on the contrary, enjoys comparative immunity from this form of secondary disease; hence the opinion, that syphilis for the most part assumes a milder type, and is more easily managed, in the female than in the male subject.

That seeondary syphilis however, in the long run, is not only equally prevalent, but a great deal more disastrous in its eonsequences upon the female frame, than it is observed to be upon that of the other sex, to say nothing of the lasting evils entailed upon the offspring, is abundantly proved by eases having occurred under my own observation, of whieh I shall presently introduee a few examples. The skin performs the offiee of an active emunctory organ, through which a vast amount of material, no longer needed in the economy, is emitted from the eireulating mass. For obvious physiological reasons, the material thus deposited, unlike effete substanees similarly eireumstanced in the deeper-seated organs, is not readily, and is at all times very sparingly, reabsorbed: on which aeeount it is liable to accumulate, and, if of a virulent nature, to be productive of injurious effeets upon the part exposed to its influence. The same line of reasoning would lead one to expect a similar condition of the uterus, under similar eireumstanees; this organ being one of the most active of the

emunctories, and appearing to possess a peculiar tendency to solicit, so to speak, and to retain the syphilitic poison within its structure. However, whether such be the case or not, there is no doubt, that evidences of the existence of the disease may very frequently be found in the lower part of this organ long after it was believed to have been driven altogether from the system.

The constitutional symptoms denoting the presence of secondary syphilis in the female, are, pallor of the countenance, languor, precarious appetite, loss of rest, hectic feverishness, lumbar and hypogastric pains, disordered secretions, and the appearance of the disorder in the offspring.

The local pathognomonic signs, to enumerate them in the order of their frequency, are:—1. *Endo-cervicitis*, or inflammation, to greater or less extent, of the lining membrane of the cervix uteri, with inflammation, excoriation, or ulceration of the labia around the uterine orifice. This appearance was noticed in nineteen out of twenty-eight cases. 2. A *mottled* or *patchy* appearance of the cervix, consisting of a number of dark-red spots of irregular shape, surrounded by lighter-coloured portions: they sometimes appeared highly irritable and excoriated, but not aphthous. The whole cervix was generally enlarged and slightly indurated, and there was evidence, in most cases, of endo-cervicitis. This state of parts was noticed in eleven out of twenty-eight cases. 3. *Aphthæ* of the cervix, occurring in eight out of twenty-eight instances. The patches, which appeared perfectly white, of a circular or oblong shape, situated upon a dark-red base, were easily detached by the aid of lint, and left a bright-red surface of similar form and dimensions, having, in some instances, a very minutely granular aspect. These were associated with hypertrophy of the cervix, and sometimes endo-cervicitis. 4. *Warts* were witnessed in three of the cases registered in the preceding table — twice on the cervix, and once on the walls

of the vagina. They were all associated with endo-cervicitis and hypertrophy of the cervix. These exerescenees were witnessed, however, in many of the instanees not tabulated. Inflammatory induration or hypertrophy of the cervix was present in most of the eases recorded in the table, and there was not unfrequently observed an extremely corrugated state of that part of the vaginal mueous membrane lying in immediate contact with the bladder, and beneath the arch of the pubis, with hypertrophy of the cellular structure surrounding the urethra and about the neck of the bladder.

Case XLI.

Secondary syphilis of eight years' existence; primary affection treated without mercury; four consequent abortions; transmission of the syphilitic taint to three of the offspring; cure.

J. R., thirty-seven years of age, of the sanguine-lymphatic temperament, and originally of a sound constitution, bore her first six children alive at the full term of utero-gestation. Six weeks after her sixth confinement, she contracted syphilis from her husband. She had several primary sores on the external genitals, and afterwards, scaly eruptions on the face and chest, ulcerated sore throat, and yellow vaginal discharge. The infant, whom she suckled, become also affected with secondary syphilis in form of scaly eruptions which covered the whole body, huskiness of voice, ulceration of the lips, and sore throat.

Both mother and child were under treatment at a Lock Hospital for upwards of six months, at the end of which time they were pronounced cured. The child at this period was much emaciated, being still troubled with excoriation of the mouth, huskiness of voice, cough, and fissured anus: it died cachectic at two years of age The mother, also, had become greatly reduced in strength and appearance: she was

free from external sores and eruptions at the time of her dismissal from the institution; but still had a copious yellow-coloured discharge, which she believed prevented her from getting strong. She was never previously troubled with the whites, or any similar complaint, and was of opinion that the "waste" now upon her was caused, to use her own expressive terms, by the venereal complaint having "got into her inside." She menstruated scantily and with suffering.

During her next (the seventh) pregnancy, the vaginal discharge was abundant, and exhibited the same greenish yellow appearance. She was delivered a fortnight before the full period of utero-gestation; the child being still-born and putrid. Her recovery was long and tedious, confining her within the house seventeen weeks. The eighth and ninth pregnancies terminated in abortion, each at four months and a half. The tenth pregnancy arrived at the full term; the child, who was greatly emaciated, was mottled with copper-coloured patches, and died on the third day. The eleventh pregnancy ended in a premature birth at seven months; the fœtus being still-born and much decayed.

When seven months advanced in her twelfth pregnancy, she was admitted (December, 1845,) a patient of the Lying-in Hospital. The surface of the body was perfectly free from every appearance of eruptive disease; the skin, however, was extremely sallow, the body emaciated and feeble, and there was a plentiful purulent discharge from the vagina. Her condition may be best described by stating that she was in the last stage of venereal cachexy. She believed the fœtus was dead, as its movements had ceased, and she had experienced symptoms of approaching labour.

Having ascertained, however, by stethoscopic inquiry, that the child was still living, a vaginal examination was made. The cervix uteri was enlarged, indurated, and spotted with excoriated patches. Around the orifice was an angry-looking,

granulating ulcer, extending within the cervix to a distance beyond the reach of observation; a deep, ulcerated fissure occupied one of the commissures. The parts, which were covered with a quantity of purulent secretion, were slightly painful upon pressure.

The treatment consisted in the immediate and free application, to the diseased surfaces, of the solid nitrate of silver, which was afterwards repeated at suitable intervals; in the exhibition of two grains of opium combined with the same quantity of *hydr. subm.* at bed-time, this remedy was thrice repeated on successive evenings; and the compound decoction of sarsaparilla, containing a small dose of iodide of potassium, daily. After three or four days, a combination of *hyosciamus* and *hydr. cum cr.* was substituted as an evening anodyne and alterative. The threatenings of labour subsided, the child was again felt, and soon became vigorous in its movements, and the vaginal discharge diminished: in three or four weeks her condition was remarkably improved. She was delivered of a full-grown, plump, healthy-looking child at the full term of utero-gestation, on the 11th of February, 1846, and recovered favourably. During the treatment, the system had never been manifestly brought under the influence of mercury; nor was the vaginal discharge ever completely absent.

I believed, however, that the system had been perfectly freed by the treatment, from the syphilitic taint. But in this I was deceived. On the sixth day, the child appeared pale and somewhat emaciated. On the twelfth day the emaciation was still more manifest; and a dark red spot, the size of a split pea, appeared on its left cheek; the day following this had enlarged to twice the size, and a similar one was seen on the right side. On the seventeenth day, the whole surface of the body was covered by a scaly eruption, and the voice was husky; and seven days later, there was complete aphonia, the lips were swollen, one corner of the mouth was ulcerated, and

the anus was fissured. So entirely a mass of disease did the little creature appear to be at this stage, that when taken to my esteemed friend, the clergyman of the district, for the purpose of having the rite of baptism administered, he, understanding the nature of the affection, did not dare to touch it, without the intervention of an additional provision of drapery.

The treatment consisted in mercurial inunction practised on Sir Benjamin Brodie's plan; and in the exhibition of the compound decoction of sarsaparilla, with minute doses of iodide of potassium. At the age of seven weeks, not a spot was to be seen on any part of its body, with the exception of a small granular surface on the inside of one of the nates: this also became healed in a short time by the application of the nitric oxyde ointment. At three months old the child was plump, had recovered its voice perfectly, and appeared the picture of health.

The restoration of the child's health was not gratifying on its own account merely; nor were the effects witnessed entirely attributable to the remedies which were employed in its case individually. It afforded also a pleasing index to the progressive improvement of the mother's condition; the medicines which she imbibed imparting their sanative influence to her nursling through the same channel which, on a former occasion, had conveyed the principle of destruction. In her case, a plan of treatment was adopted similar to that before mentioned; the system was brought slightly under the influence of mercury, the effect of which was maintained for a short time by means of the oxymuriate; instead of sarsaparilla, the *decoctum radicis hydrolapathi*[1] was successfully administered;

[1] The virtues of this remedy in the secondary, or rather in the tertiary forms of syphilis, cannot be too highly extolled. It is the *Rumex Hydrolapathum*, not the *acquaticus* formerly spoken of as an anti-syphilitic. The two varieties present very nearly the same physiognomical characters. The *Hydrolapathum* may readily be distinguished, however, by having its leaves *acute* at each end, and slightly glaucous, or mealy; whereas, those of the

and the uterus was treated with the strong solution of nitrate of silver.

Case XLII.

Secondary syphilis of twelve years existence; primary affection treated without mercury; thirteen pregnancies — of which eight ended abortively; death of five of the offspring in infancy from secondary syphilis; disease of the uterus; cure.

C. M., thirty-one years of age, of the sanguine-bilious temperament, was married before the age of nineteen, having previously enjoyed good health. She contracted syphilis from her husband soon after marriage, and had a large primary sore on the right labium externum. The husband, who had chancre and bubo, was treated by a druggist, but has ever since been subject to sore throat, scaly eruptions on the face, head, and sternum, and enlarged sub-occipital glands. These symptoms still prevailed when he first presented himself to my notice in February, 1847. His wife also was placed under the care of the same practitioner; she took a mixture and pills, but was not salivated; the sore was treated with caustic.

aquaticus are *cordate-oblong*, and their surfaces smooth and glossy. Moreover, the petals of the former are nearly *entire*, and unequally *tuberculated;* those of the latter are *reticulated*, and without tubercles. The sensible properties also of the root — the only part of the plant recommended for use — are considerably different in the two varieties: these, in the former, being much more bitter, more powerfully astringent, than in the latter, and moderately blended with an agreeable acidity. I have for several years used it extensively both in public and private practice with the most gratifying results, in cases where sarsaparilla had been given in large doses for many months together without the slightest benefit.

Hydrolapathum will be found equally serviceable in several forms of disease besides those of syphilitic origin, especially in some chronic cutaneous affections, glandular enlargements, atonic dyspepsia, and others essentially connected with a bad habit of body. It may be advantageously conjoined with *taraxacum*, and sometimes with senna, or rhubarb. It possesses the additional recommendation of being exceedingly cheap, and easily prepared for use.

Her first pregnancy terminated at six months in the birth of a putrid fœtus; her second, fifth, sixth, eighth, tenth, and eleventh were abortions at three months; her twelfth at eight months, still-born and putrid; and her third, fourth, seventh, ninth, and thirteenth at the full term of utero-gestation. The five last-named were born alive, but meagrely grown; each became affected with secondary syphilis a few days after birth, and they all died of venereal cachexia, covered with a scaly eruption: two at the age of four weeks, one at six weeks, one at eleven weeks, and one at the age of fifteen weeks.

The patient first presented herself to my notice on the 13th of November, 1846, when six months advanced in her thirteenth pregnancy. She was exceedingly anxious to preserve her offspring alive on this occasion, at the same time expressing a belief, founded upon certain manifestations like those experienced in former instances, that the child had already perished. She was greatly emaciated, sallow, languid, and irritable; there was a free vaginal discharge which had twice, recently, been mixed with blood. Stethoscopic inquiry discovered the fœtus to be still alive, although its movements were exceedingly feeble. The anterior labium was enlarged and eroded at its lower and internal part; the cervix beyond, was mottled and patchy; the boundaries of the orifice were angry and granular, including the posterior labium, although this was but little enlarged. The irritation appeared to be continued within the cervix, and several of the follicles were prominent and covered with aphthous crusts.

The treatment consisted in the free application of nitrate of silver to the diseased surfaces, and the employment of the soothing and alterative remedies before mentioned. The threatenings of abortion subsided, the discharge decreased, and the general health soon appeared in a better state; but the patient's visits at the Institution were irregular and at long intervals. She was delivered, however, of a living,

healthy-looking, although puny infant, at the full period of utero-gestation, on the 6th of February, 1847. At the age of fifteen days the child had secondary eruptions, and died, emaciated, aged eleven weeks.

The mother, as well as her husband, were in the meanwhile undergoing a course of treatment, which was continued in all, about three months; and at the beginning of May both appeared to be perfectly cured.

Case XLIII.

Secondary syphilis of six years and a half duration; primary affection treated without mercury; death of two infants from hereditary transmission; cure of the mother during pregnancy.

M. J., thirty years of age, of the lymphatic temperament, bore her first child at the full term of utero-gestation, at the age of twenty years and a half, and her second, equally favourably, a year and nine months afterwards; both children being alive and healthy: she had previously enjoyed good health, and had never experienced a leucorrhœal affection. A month after her second confinement, she contracted syphilis from her husband; the affection appearing in form of two large chancres near the urethra, and a bubo in the right groin. She was nine months under treatment, during which period a crop of secondary eruptions appeared on the face and chest, with sore throat, husky voice, and leucorrhœal discharge. She was never salivated. The infant, whom she suckled, was covered with scaly eruptions seven weeks after she herself became infected, and died emaciated, with venereal sore throat, at the age of eight months and a half. Her third child was prematurely born at seven months; on the third day, secondary symptoms appeared, and it died on the seventh day, covered with scaly eruptions. Her fourth child was born at the full term, and was covered with syphilitic eruptions on

the ninth day; at the end of three weeks the anus was deeply fissured, the mouth and throat inflamed and excoriated, and the voice husky. The complaint was cured by means of *hydr. cum crætâ* and mercurial inunction; but an occasional attack of eruptions was experienced at intervals during the first two years of its life: these were treated in a similar manner, and the child was in the enjoyment of vigorous health at four years of age. The patient did not become again pregnant for three years and a half, during the whole of which period she was in very delicate health; the menstrual function was attended with great suffering, the discharge being very profuse, and continuing from seven to nine days each time; and the intervals were occupied by a profuse leucorrhœa of yellow colour, with severe lumbar and hypogastric pain.

She presented herself to my notice on the 30th March, 1846, when five months and a half advanced in her fifth pregnancy, labouring under violent phlegmonous inflammation of the right labium majus, accompanied with other symptoms urgently threatening abortion. The fœtal pulsation and placental *soufle* were both distinctly audible. Ten days afterwards, the treatment adopted having reduced the inflammation and effectually relieved the other symptoms, the cervix uteri was found greatly enlarged, of a dark red colour, and completely covered by aphthous patches, beneath which, the crusts being removed, were inflamed patches of equal dimensions, and of a brighter hue. The boundary of the os and internal cervix uteri were in a state of ulceration, from which exuded a quantity of sanious matter slightly mixed with blood.

The cure was accomplished by the aid of mercurial alteratives, and other tonic and soothing remedies. She was delivered of a full-grown, healthy child on the 15th of July, three months and a half after the first report, and recovered favourably. The infant, at six months old, was plump and

healthy, and had not manifested a trace of the venereal taint.

The preceding cases of secondary syphilis supervening upon an external primary affection, may serve to show the great tendency that this form of disease has to remain long in the system without any other external manifestation of its presence besides the characteristic discharge from the vagina; and the insufficiency of the non-mercurial treatment for its eradication. The following are instances wherein the disease first exhibited itself, externally, in the secondary form, the primary affection having been, in all probability, implanted upon the uterus, or upon the upper part of the vagina, thus having passed through its earlier stages without exciting particular attention.

Case XLIV.

Secondary syphilis appearing during the period of lactation, not preceded by external primary affection; one abortion; death of eight children in infancy from the transmitted taint; endo-cervicitis; excoriated cervix; cure.

M. F., thirty-nine years of age, of the lymphatic temperament, bore her first four children alive at the full term of utero-gestation, three of whom survive. During her fourth puerperal period, her husband had a primary venereal sore, and bubo. Two months after confinement she had an abundant vaginal discharge of a yellow colour, and her health became very infirm. The infant, originally plump and healthy, began to be sickly, fretful, and flabby, and at the age of four months had excoriated mouth, sore throat, husky voice, and abrasion of the nates. Its skin was soon afterwards covered with dark-coloured. scaly patches, of a decidedly syphilitic character, and it died cachectic at the age of sixteen months. Five months after delivery, the mother had a plentiful crop of secondary eruptions on the face and chest, with sore throat,

and inflammation of the eye, for which she was several months under treatment, but without being salivated. The vaginal discharge continued unaltered, both as to quantity and appearance. She had never before been subject to leucorrhœa.

Her fifth, sixth, seventh, eighth, ninth, and tenth children were born alive at the full period of utero-gestation; they all had purulent ophthalmia, coming on two or three days after birth: one lost the sight of both eyes from escape of the humours during the acute stage of the complaint. All had copper-coloured, scaly eruptions, first appearing on the nates, and soon extending over the whole body; spongy gums, sore throat, husky voice, and fissured anus. Five died before the age of four months, and one lived in misery a year and five months. Her eleventh pregnancy was an abortion at three months.

Her twelfth child was born at the full period, on the 25th of March, 1847, and was brought to me at the age of five weeks, in a very weakly, emaciated condition. It was recovering from a violent attack of purulent ophthalmia, which had left a superficial, gummy ulcer at the outer canthus of each eye; an ulcerated chink occupied each corner of the mouth, and the anus was in a similar condition. The nates, thighs, legs, feet, arms, chest, and face, were spotted with dark-red, superficial ulcerations, exuding a gummy matter. It died on the 8th of May.

The mother had a plentiful discharge from the vagina, and appeared in very infirm health. The cervix uteri was in a state of inflammatory hypertrophy, mottled, and in parts, excoriated. There was also well-marked endo-cervicitis. She has now (May 30th,) been six weeks under treatment, which has consisted principally of small doses of the oxy-muriate, and *decoctum hydrolapathi;* and she asserts that her health has not been in so comfortable a state for eleven years.

Case XLV.

Secondary chancres within the vagina of seven or eight months existence; endo-cervicitis; abortion; cure.

S. B., twenty-one years, of the sanguine temperament, was married at nineteen and a half, having previously enjoyed good health. She aborted of her first pregnancy at three months from accident. During recovery, her husband had a venereal affection, of which he is said to have been cured in three or four weeks. She menstruated a month after miscarriage, and immediately became again pregnant. She shortly became aware of the existence of a vaginal discharge in form of the whites, an affection with which she had not before been troubled: this was of a yellow colour, leaving deep stains on the linen. There was also tumefaction within the vagina — "swelling of the womb," — and the sexual congress was attended with great suffering. She was several weeks under treatment, which consisted in injections, and the exhibition, so far as could be understood from her statement, of the copaiba mixture; the complaint being regarded as gonorrhœa. The parts were not submitted to examination.

She applied to me when seven months advanced, believing abortion to be near at hand. Her health was in a miserable state. Her throat was swollen and extensively ulcerated; there were several sloughs on the legs, the sub-occipital glands were enlarged, and she had a copious, yellow vaginal discharge. On applying the stethoscope, no indication of fœtal life was discovered. The speculum, the introduction of which occasioned great suffering, brought into view five deep, chancrous-looking sores, with raised, hardened edges, and yellowish centres, three on the left and two on the opposite wall of the vagina, about an inch and a half from the external orifice. The cervix was enlarged and presented several excoriated

patches, and there was well-marked endo-cervieitis. She was delivered four days afterwards of a dead fœtus, between six and seven months grown, and in a decayed state. The eure was aecomplished in the manner already related.

The following cases are illustrations of venereal eontamination received from one having the eomplaint in its secondary form; the primary affection having been cured, and the poison reputedly eradieated from the system in the first individual, before the risk of transmission was ineurred.

Case XLVI.

Secondary syphilis of four years existence; no primary affection; treatment non-mercurial; one abortion; death of one infant from syphilis; cure during pregnancy.

M. Me. I., twenty-six years of age, was married at twenty-two, being remarkably stout and healthy. The husband had formerly a primary venereal affeetion in form of ehancre and bubo, followed by secondary eruptions. He was several months under treatment at a "Lock Hospital," being reported as perfectly cured three months before marriage: he was not salivated, and heard it mentioned that the eure was effeeted without the aid of mercury. Five or six weeks after marriage, the wife had a number of eopper-coloured eruptions on the faee and forehead, sore throat, and a yellow vaginal diseharge, all coming on simultaneously, and being regarded as the result of exposure to cold. In a short time, the skin being in great measure covered with eruptions, and the throat uleerated, the affeetion came to be regarded as syphilitieal. She was for four weeks an in-patient of a hospital, whenee she was dismissed "cured." She had not been salivated. The vaginal diseharge continued in as great abundanee, and exhibited the same eharacters after her dismissal from, as before her admission into the institution in question.

Her first pregnancy terminated at eight months, a year

after marriage: the child being still-born and decayed. Her second child was born alive at the full term, but died at the age of four months and a half, emaciated and covered with syphilitic eruptions: the affection having appeared ten weeks previously. When seven months advanced in her third pregnancy, she was admitted a patient of the Manchester Lying-in-Hospital, in June, 1846, being in very delicate health, and threatened with abortion. The child had not been felt to move for several days; stethescopic inquiry, however, discovered it to be still living. The cervix uteri was enlarged, of dark-red colour, aphthous, and there was well-marked evidence of endo-cervicitis. The discharge was plentiful, and exhibited purulent characters.

The treatment consisted in the immediate and free application of nitrate of silver to the diseased surfaces; in the exhibition of *hydr. subm.* and opium, and compound decoction of sarsaparilla containing small doses of iodide of potassium, at suitable intervals. The system was brought slightly under the influence of mercury, and the other remedies were continued until the end of pregnancy; the nitrate having been five or six times used during this period. She was delivered on the 27th of August, about nine weeks after the first examination, of a full-grown, plump child, who was still in health, and free from all appearance of syphilitic taint, at the age of three months. The uterine affection was perfectly cured before delivery, and remained in a healthy condition afterwards.

Case XLVII.

Secondary syphilis of seven months existence; no primary affection; warts of the vagina, and endo-cervicitis; cure during pregnancy.

A young gentleman of respectable connections, eight or nine months married, called upon me in February, 1846, in

a state of great mental distress concerning his wife, who, he unhesitatingly stated, was labouring under secondary syphilis. She was in the seventh month of her first pregnancy. Two or three months after marriage, she first became aware of a vaginal discharge, which, as she had several times had occasion to remark, was of a disagreeable nature. In a short time, a warty growth was noticed near the entrance of the vagina, and afterwards several more appeared; since then they had continued rapidly to increase in number and size, until the boundaries of the orifice had at length become completely studded with them. For several days previous to my attendance, she had complained of sore throat, which, on being examined, presented a deeply inflamed aspect, with several patches of ulceration. Her general health had of late declined; the countenance became shrunk, sallow, and slightly jaundiced. The husband stated that about six months before marriage, he had contracted chancre, which, while yet in the incipient stage, was shown to an "experienced druggist," who covered it with caustic, and gave him sarsaparilla to take. The pimple disappeared, and the surface healed; but in the same spot a small wart sprang up, which had ever since existed: it was the size of a large pea, and situated on the corona glandis. He was considered to be perfectly cured three months at least, before marriage. He did not afterwards incur the risk of a fresh infection.

In the wife's case, not only the labia externa, but also the whole vaginal surface even to its upper part, as well as the cervix uteri, were studded with warty excrescences, and the orifice of the uterus was in a state of granular ulceration. The treatment consisted in a course of mercurial alteratives and sarsaparilla, during which, the mouth was once brought into a state of ptyalism. She was delivered at the full term of utero-gestation of a living, full-grown child, apparently in health. The warts, which were treated with an injection of

nitrate of silver and opium, entirely disappeared before confinement. Seven or eight days after delivery, the child had a few dark-coloured patches on the face, and excoriation on the inside of the nates; these were soon subdued, however, by the aid of alterative remedies.

The employment of mercury in syphilitic affections requires the exercise both of skilful judgment, as well as of the most wary attention during its operation. While, on the one hand, there exists not a more valuable remedy under proper management, there is not, on the other, a more dangerous weapon, when wielded by the hand of the ignorant or the unpractised. Some constitutions are highly susceptible of its influence, and upon these a few grains of the more active preparations will often be found sufficient to produce unpleasant consequences. This may occasionally be attributable to idiosynerasy; but the lymphatic and nervous temperaments, and the strumous and cachectic habits of body, appear to be pre-eminently disposed to such manifestations. Nevertheless, mercury is not to be altogether dispensed with, even in debilitated constitutions, if the venereal taint shall have been undoubtedly proved to exist; some of its preparations indeed, combining as they do, in admirable fitness, both alterative and tonic properties, seem eminently adapted to these cases. Such, for instance, are the oxymuriate and the proto-iodide. Strong, plethoric constitutions on the contrary, especially those of the bilious temperament, sometimes resist the action of the most powerful mercurial preparations, for a great length of time, even when given in very large doses. In these cases the oxyde and submuriate will be found the most appropriate forms, as internal remedies, assisted by inunction, mercurial fumigation, and such other auxiliary means as the necessity of the case may require. When it becomes desirable to administer mercury in large doses, especially if the prepa-

ration used be the submuriate, it will often be found expedient to eombine it with suitable doses of opium, with a view of preventing it from passing too speedily away by the bowels. Its aetion is eonsiderably promoted also by antimonials, Ipeeaeuana, blood-letting, the warm-bath and sudorifies. In all cases, the treatment by this means, should be continued until the secretions become decidedly changed; an objeet whieh, generally speaking, ean never be considered as fully and safely attained, until the effects of the remedy are perceptible in the mouth; although it is never neeessary to produee salivation. After this end shall have been aeeomplished, the vegetable alteratives must be substituted, and their use continued for a considerable time.

The remedy of this class now universally employed is sarsaparilla, administered, for the most part, in form of eompound decoction. As at present produced, it is an elegant and agreeable medicine, mueh in fashion, and is often productive of benefieial results, if continued suffieiently long. But the good derived from the use of the preparation in question, is probably due to the mezereon, guaiacum, and sassafras wood with which it is eombined, and not to sarsaparilla. Withhold entirely this tasteless, inodorous, and, in my opinion, inert artiele, and the preparation has very nearly the same sensible properties, and preeisely the same effeet as an alterative remedy will be derived from it. This subjeet, in an economieal point of view, is one deserving of serious eonsideration, espeeially in Hospital praetiee; many hundreds of pounds being annually expended out of the funds of some Institutions in the purehase of this artiele alone. I have been in the habit for a length of time of using the preparation without sarsaparilla, but introdueing an increased proportion of the other ingredients, with more deeided benefit than is commonly secured by the ordinary form of the preparation.

But we possess, among our own indigenous productions,

many valuable, although neglected remedies of this class, and which, if properly used, would in all likelihood be amply adequate to the requirements of cases arising in the climate in which we live. This accords with the antiquated adage in reference to the "sufficiency of the soil for the needs of her offspring." Of the remedies here alluded to, I need mention only the *Solanum Dulc-amara,* the *Arctium Lappa,* and the *Rumex Hydrolapathum.* The latter I have used in a great number of cases, not only of secondary venereal affections, but also in other forms of disease, with the most satisfactory results; and it is one of the most speedy and effectual remedies which I have hitherto seen used, for the purpose of rectifying the hœmorrhagic and scorbutic diathesis. I now generally combine it with *Taraxacum* and sassafras wood. The effects are often perceived after a few large doses have been taken; but its use should be continued several weeks at least,—in some instances, two or three months; I have sometimes introduced it as a substitute for sarsaparilla in the compound decoction of that name. The efficacy of the two preparations relatively, scarcely admits of comparison.

10. *Prolapsus Uteri.*

Descent of the uterus into the middle and lower parts of the pelvic cavity is an event of very frequent occurrence; and it is not uncommonly met with in a state of partial or complete extrusion beyond the boundaries of the external vaginal orifice. The latter condition has been particularly signified, in the works of most writers on the subject, by the term *procidentia,* the former by that of *prolapsus,* although the two words are often used synonymously, to denote either the one stage or the other For the sake of convenience, however, I shall employ each in a separate sense, to denote the two distinct degrees of the complaint as above indicated.

Prolapsus uteri is for the most part associated, at its com-

mencement at least, with impairment of the general health; and is immediately referred to morbid relaxation of the fibrous and areolar tissues in the neighbourhood of the pelvis, especially of the plicated bands of peritoneum, and the round ligaments, which commonly assist to maintain it in its normal position. Some have added, that it may be determined by increase of volume and weight of the organ; but I believe this to be altogether inadequate, else, why does not such displacement always take place during pregnancy? It often appears as a consequence of difficult labour; and occasionally ensues upon affections of the bowels, accompanied with severe straining efforts, as diarrhœa, dysentery, and hœmorrhoidal affections; and it is sometimes the result of accidental violence, over-exertion, or want of the ordinary necessaries of life.

My own opinion respecting the cause of prolapsus uteri is, that it more commonly owes its existence to disease of the lower part of the uterus, as the primary exciting condition, than to any other. This appears the more probable since disease of the cervix, with its attendant phenomena, is almost invariably an accompanying condition of such displacement. This view, moreover, is agreeable to certain physiological laws affecting these organs.

The anatomy of the vagina consists of a layer of mucous membrane, with its peculiar accessory secreting apparatus, implanted upon a thick cushion of areolar tissue, which possesses, in an eminent degree, erectile, or inherently contractile properties; together with an accumulation of muscular fibres situated at the lower and external part of the organ, constituting the sphincter vaginæ. The natural tendency of these structures is to approximate the opposing surfaces of the vagina, so that, in the healthy state, they are constantly in apposition, and the reputed cavity is, in fact, no cavity at all, but a sac so completely obliterated as not even to

admit the permeation of air. The mutual ingraining of the corrugations contributes to render the occlusion still more perfect. There cannot be a doubt that it is the healthy action of these tissues which forms the principal means of sustaining the uterus in its proper elevation, and not the so-called ligaments inserted into its upper part; seeing that these structures have their distal attachments at a point below the level of that part of the organ into which they are inserted; and that they are withal peculiarly distensible. These bands certainly serve to restrain the lateral movements of the uterus; but it is the vaginal sub-mucous tissue which prevents its descent into the lower regions of the pelvic cavity.

The physiological question now commented upon, may be admirably verified by the aid of the speculum, in the withdrawal of which, the walls of the vagina may be seen to fall firmly together, presenting at every move, an almost horizontal, corrugated surface, having a central line, showing the point of contact of the opposite sides; and so energetic is this contractile power, that ere the instrument has receded three quarters of an inch from the cervix of the uterus, the organ can no longer be seen, on account of the close approximation of the vaginal parietes due to the exercise of this property. This circumstance is one which should be particularly borne in mind in reference to local treatment; the general belief being, that if an injection be merely introduced within the external orifice, the whole *cavity* must necessarily be exposed to its influence; whereas, no part of the surface is in reality affected by the remedy beyond that to which the point of the instrument reaches, and that also over which the fluid passes on its immediate rejection. For the successful application of injections, therefore, it is absolutely necessary that the orifice of the instrument be brought into contact with the part affected. Authors have gravely recommended the patient to lie on her back, with the pelvis elevated, in order to secure the full effect of the material injected!

Prolapsus of the uterus may interfere to a serious degree with the comfortable discharge of the function of utero-gestation; and it not unfrequently determines the arrest of the process prematurely. It is liable especially to inconvenience the action of the rectum and of the bladder, to exert undue compression upon the sacral nerves, and to impede the free current of blood through the vascular system of the pelvis; thereby occasioning venous congestion, and a tendency to effusion within the uterus, with consequent separation and destruction of the ovum. It is an extremely troublesome complaint; and the remedies commonly adopted for its relief, are scarcely less annoying and disagreeable than the existence of the complaint itself, even in its worst form.

The treatment generally adopted in these cases, is altogether unscientific and ineffectual; consisting, principally, in the application of mechanical support by means of pessaries, a great variety of which have been, at different times, invented for the purpose. These instruments serve generally speaking, to maintain the displaced organ in an elevated, although by no means in its natural position: but their presence in the vagina is one of the most unfortunate and annoying circumstances that can possibly be necessitated in married life. They invariably aggravate the disease for the relief of which they are employed; they extend the inflammatory action of the cervix in cases where it was already present, and frequently create it in those wherein it did not previously exist; they irritate, and often completely destroy the healthy tone of the vagina, augmenting the leucorrhœal discharge; and, unless very frequently renewed, are liable to detain the morbid secretion for an indefinite period within the cavity; they have also a tendency to encourage putrefaction, and thus to originate a source of constitutional irritation sufficient to derange the general health in a most serious manner. To discover a means of remedying this troublesome

affection without necessitating the employment of the instruments in question, becomes, therefore, an object deserving the most serious consideration.

That prolapsus or procidentia uteri can be effectually treated, and the position of the organ permanently restored without the aid of the pessary, there exists not a doubt on my mind. The anatomy of the vagina, and its physiological adaptation to the purposes of a natural uterine support, under normal circumstances, will serve to explain in what manner atony of this organ constitutes the true pathology of the displacement in question; and the many examples of cure effected by means adapted to the relief of this condition alone, sufficiently establish the correctness of this view. Moreover, the numerous instances of displacement, of almost every grade and character, which have been successfully treated without mechanical aid, at the Manchester Lying-in Hospital during the last two years, warrant this unconditional assertion. The cases are generally accompanied with leucorrhœa, and with inflammation or ulceration of the cervix uteri, evidences of which are found in almost all instances, to have prevailed at a period anterior to the occurrence of the displacement.

The curative measures to be adopted scarcely differ from those already recommended in the treatment of some other forms of uterine disease. The state of the constitution claims primary consideration. If there be entire absence of all febrile irritation, a generous diet, unalloyed with excitants, should be prescribed; assisted by tonic medicines, such as quinine, the metallic oxydes, and chalybeates, of which latter class the iodide of iron in doses of from two to five grains twice or thrice daily, combined with the same quantity of extract of cinchona, that of taraxacum, gentian, &c., forms one of the most efficient. The local treatment should consist in applications of nitrate of silver, or other suitable remedies to the diseased surface, and in the insertion of

medicated tents by the aid of the *Prolapsus tube*. This latter proceedure may be practised immediately after the nitrate has been applied, although the remedy with which the tent is charged be of a very different nature from that of the caustic.

The manner of using the *Prolapsus tube* — which will be found of equal service, in the management of prolapsed displacement of the uterus, as in most other forms of uterine disease, and enables the patient safely and efficiently to apply the remedies herself, without the interference of the practitioner — is extremely simple. The charged tent, to which a length of thread has been previously attached in the manner before directed, must be placed in the tube, the upper orifice of which is to be applied against the protruded portion of the uterus, in such a manner as to receive the os uteri within it. The instrument, previously smeared with some unctuous material, and having its curved arm placed anteriorly, in a direction towards the abdomen, is now to be forced gently and steadily backwards, until the whole, or greater portion of it has passed within the canal, or until a moderate degree of resistance is felt to oppose its further ingress. In the course of this movement, the upper aperture of the instrument, and consequently the uterus which it carries before it, describes a crescentic sweep as it passes along the vagina, corresponding as nearly as possible to the line which indicates the axis of the pelvis; this is determined by the curved arm, impinging upon the resisting arch of the pubis; the lower or external aperture of the tube being more and more depressed towards the fourchette, and its other extremity being proportionably elevated, at each succeeding step of the operation. The uterus being thus restored to its natural position, the tent or pledget must be pressed upwards against the cervix, and held in that situation by means of a skewer or other suitable instrument, the tube at the same time being gently withdrawn. The recumbent

posture should be strictly maintained for several days, and very little exercise taken for some weeks afterwards. The cases recorded in the accompanying table were those of poor women, obliged, during treatment, to pursue their domestic duties, which constantly and seriously interfered with the favourable effects of the remedies; hence the reason, probably, why most of them were so long under treatment. The application should be renewed daily, or twice a-day if convenient.

The most efficient remedies in cases of this character are, nitrate of silver, sulphate of zinc, sulphate of copper, matico, opium and tannin. When applied by means of the lint tent, they are required to be in a much stronger form than can possibly be introduced with the syringe, on account of the irritation which they would necessarily produce upon the external parts. The first three—the metallic preparations, should not be used oftener than every third or fourth day, the vegetable applications being adopted intermediately. An emollient injection introduced by means of Clarke's syringe, should, when convenient, be made use of after the removal of each tent. The solution of nitrate of silver which I generally apply in this manner, consists of one dram of the salt dissolved in two ounces of rain water: the *strong solution* of this article before frequently alluded to, is employed only as a substitute for the solid preparation. The sulphate of zinc solution contains one dram of the salt in eight drams of liquid, the half of which is *vinum opii*. The sulphate of copper solution is just half the strength of the preceding; its menstruum the same. Tannin and matico should be used in their most concentrated form, and it is advisable to have some of the solid particles of these materials, especially of the latter, adhering to the surface of the lint. The application should always be so managed that no portion of the liquid may descend to the external parts; on this account, one or two layers of the material forming the lower part of the tent should therefore be left untouched by the preparation.

Table XIII.

Giving an abstract account of thirteen cases of displaced uterus, with the local remedies employed in their treatment, and the results obtained in each respectively.

The term *procidentia* is used to signify descent of the uterus below the external vaginal orifice; *prolapsus*, a slighter degree of displacement.

No.	Age.	Temperament.	No. of pregnancies.		Extent of the displacement.	Duration of the complaint.	Nature of previous treatment.	Condition of the uterus.	Nature of the discharge.	Remedies used in the present treatment.	Duration of treatment.	Result.
			At full term.	Abortions.								
1	34	Sang.-bilious	1	0	Prolapsus..	1 year ...	Injections	Hypertrophy of cervix and ulceration of posterior labium.	Muco-purulent	Nitrate of silver, strong solution of tannin applied by means of the lint tent.	6 wks..	Cured.
2	36	Sanguineous	2	0	Prolapsus..	5 years..	Pessary	Hypertrophy of cervix—excoriation of both labia	Muco-pur.	Nitrate of silver, tannin tent	10 wks.	Cured.
3	23	Bilious	1	0	Prolapsus..	6 mths...	None	Inflammatory hypertrophy ...	Glairy-mucous.	Solution of nitrate of silver applied by tent	4 wks..	Cured.
4	30	Lymp.-sang..	6	1	Procidentia	3 or 4 yrs.	Injections; pessary	Endo-cervicitis from gonorrhœa	Sanio-purulent ..	Nitrate of silver—solution of zinc	3 mths.	Cured.
5	24	Bilious	0	2	Prolapsus..	18 mths.	Injections; pessary	Inflammatory hypertrophy—fissurated ulcer	Muco-pur.	Nitrate of silver—zinc and opiated tent	9 wks..	Cured.
6	31	Lymphatic..	4	0	Procidentia	2 years..	Injections; pessary	Great hypertrophy—extensive erosion	Muco-pur.	Nitrate of silver—tent saturated with tincture of matico	14 wks.	Cured.
7	36	Bil.-sang.....	3	1	Prolapsus..	3 years..	Pessary	Inflammatory hypertrophy	Glairy-mucous.	Solution of nitrate of silver, &c.	15 wks.	Cured.
8	24	Sanguineous	2	0	Prolapsus..	9 mths...	Injections.....	Inflammatory induration; ulcerated fissure	Muco-pur.	Nitrate of silver solid and in solution	5 wks..	Cured.
9	35	Lymphatic...	5	0	Procidentia	8 or 9 yrs.	Injections—bandages—pessary	Great hypertrophy—extensive erosion	Muco-pur.	Nitrate of silver and matico tent	2 or 3 wks..	Not known.
10	29	Sanguineous	4	1	Procidentia	sevl. yrs.	Inject. bandages	Induration and erosion	Muco-pur.	Nitrate of silver—zinc and opium	10 or 12 wks..	Cured.
11	27	Sang.-lymp..	2	0	Prolapsus..	18 mths.	Injections.....	Inflammatory hypertrophy & excoriation	Sanious ...	Depletion—nitrate of silver—tannin	2 mths.	Cured.
12	23	Sang.-lymp..	0	3	Prolapsus..	12 mths.	Injections.....	Hypertrophy—erosion	Muco-pur.	Nitrate of silver—matico.	9 wks..	Not reported
13	25	Lymphatic..	1	0	Procidentia	2 or 3 yrs.	Inject. bandages	Erosion	Muco-pur.	Matico	7 wks..	Cured.

In cases of extreme relaxation of the sphincter vaginæ, or where the perinæum has been lacerated during labour, the measures now recommended may of themselves prove insufficient, and recourse to surgical interference of another kind may be required. The most effectual mode of remedying this state of parts is to procure adhesion between the walls of the vagina at its lower extremity. The operation consists in removal of the integument, to a sufficient extent, from the opposing surfaces, which may be readily done either by the scalpel, or by means of caustic; the parts being carefully maintained in close contact with sutures, and the patient kept perfectly tranquil during the process of healing.

The cases introduced in the accompanying table are not intended to represent all that have been submitted to this plan of treatment. There were many more of the same description; but on account of the laborious nature of the undertaking, [1] and the numerous and peculiar difficulties

[1] In speaking of hospital duties as being irksome or laborious, I do not allude to the mere visiting and investigating of cases methodically arranged in commodious wards, and administered to by efficient nurses. The Manchester Lying-in Hospital has no internal accommodation for patients. The subjects of my inquiry were scattered over an immense district, measuring several miles in diameter in every direction, and inhabiting hovels as loathsome, pestilential, and disgusting as may be found in any civilized community.

It will hardly be credited, after all that has been said of the liberality of my fellow-townsmen, that, in a city containing 400,000 persons, numbering among its merchants some of the wealthiest and most influential capitalists in the world, whose deeds of munificence and charity have become everywhere proverbial, that the *annual contributions* towards the support of an Institution which administers substantial relief to many thousands every year of the most unfortunate, the miserably destitute, diseased, deformed, and decrepid of their dependents and work-people, *do not amount to* £350!

The Institution, so called, which was lately destroyed by fire, was an old dwelling-house, situated in a confined part of the town, and containing lodging-rooms just sufficient for the accommodation of the house-surgeon, the matron, and a maid servant; but not so much as a couch for the use of a patient who might be taken ill on the premises: nor was there a proper prescribing

which presented themselves in the present inquiry, I have been unable to collect the particulars of a greater number.

room in the establishment. When a patient happened to be suddenly seized with illness on the spot,—an accident of no uncommon occurrence,—the plan adopted was to send her home as speedily as possible in a hackney coach. The temporary accommodations at present afforded are of course still less efficient.

The numerous duties which devolve upon the resident medical officer, render that appointment one of great responsibility, and uncommonly onerous.

The dispenser of medicines, who performs, in that single capacity, as much work as ought to be accorded to two well-practised, legally-qualified hands, is an uneducated person, and discharges, besides the duties of apothecary, those also of porter, sweeper, and errand-man. The medical staff, consisting of ten educated physicians and surgeons, whose services are gratuitously rendered, are held publicly responsible for the consequences of any mistakes committed in mixing and directing the medicines.

CHAPTER X.

STERILITY.

In the generally accepted meaning of the term, sterility in the female signifies want of the aptitude for being impregnated. In cases where the connubial contract results in failure of progeny, both parties being of the proper age and in the enjoyment of health, the cause is generally attributed, and in the great majority of instances very correctly so, to a faulty condition of the female organs; the non-existence of the procreative power in the other sex being, in reality, extremely rare.

Impotence, which is the term employed to designate the state of generative insufficiency in the male, may, for the most part, be referred to the prevalence of one, or of a combination of the three following conditions:—First, the secretory organ may be defective in structure, or even altogether wanting, so that either no fluid is produced, or else is furnished in too small a quantity; secondly, the apparatus naturally designed for the due transference of the organic product, may also be absent, or defective in some of its parts; thirdly, the secretion itself, although produced in sufficient quantity, may not possess the fecundating power, on account of some abnormal arrangement of its elemental constituents. The

consideration of these circumstances, however, as causes of barrenness, does not fall within the province of the present treatise.

Similar states of anatomical incompleteness and derangement of function, are mentioned as frequent causes of sterility in the female; such as absence or disorganization of the ovaries or of the uterus, obliteration of the Fallopian tubes, malformation of the vagina, &c. Nature, however, is so abundantly liberal in the bestowment of her gifts, and so wonderfully correct in all she does, that only a very small proportion of these cases is to be met with capable of being referred to failure on her part, especially such as have a congenital origin. As the absence of organic efficiency of the kind now alluded to, — arising generally from arrest of intra-uterine development,—is, in the great majority of instances, irremediable, I shall dismiss this part of the subject without further comment. Nor is it intended to bring under consideration certain forms of accidental disorganization, although sufficient in themselves to disqualify for bearing children; such as fibrous, polypoid, and fungous growths, and malignant degeneration of the uterus, as well as the various diseases of its appendages, which, for the most part, are alike beyond the reach of observation and of relief: my object being to point out those more frequent causes of barrenness consisting in diseased states of the uterus and of its organic product, and which, generally speaking, are susceptible both of demonstration and of cure.

From what has been already observed in a former part of this volume, the reader will be prepared to expect that some of the conditions therein described as capable of arresting pregnancy in its early stages, will be referred to in this place as being sufficiently powerful to hinder its occurrence altogether. Chronic endo-uteritis, or what may be called irritable uterus, is, in fact, one of the most frequent causes of sterility.

The disease generally sets in soon after marriage, in cases where it is not attributable to speeifie eauses; and in some rare instanees, there are evidenees of its having existed previously. The earliest symptoms are, a sense of tension and soreness of the abdomen, aehing of the loins, pain of the hypogastrium and thighs, pallor of the eountenanee, languor, and general *malaise*. A slight leucorrhœal discharge manifests itself; this, at first, is elear and eolourless, but soon acquires a yellowish or brownish tinge, and is not unfrequently offensive. The menstrual funetions are performed with suffering; the diseharge appears in unusual abundanee, being sometimes elotted; and the peeuliar seeretion eharaeteristie of internal inflammatory aetion, oeeupies the whole interval between one menstrual period and another. The affeetion is aeeompanied with rigors and remittent fever; and there is a great tendency to peritoneal and enteritie disturbanee. If the uterus be submitted to examination, its body, espeeially at the posterior aspeet, will generally be found enlarged and painful to the toueh, the eervix is unusually tense, sometimes erysipelatous, the labia are more or less thiekened, and present a vivid red, irritable-looking ring of inflammation surrounding the orifieium uteri, whence issues a quantity of iehorous or sanious fluid, emitting a peeuliar odour. For the most part, this fluid produet differs materially in its sensible properties both from pus and the normal uterine mueus: the two latter are essentially alkaline; whereas the former exhibits an acid reaction, whieh property, on some oeeasions, upon subsequent admixture with the vaginal mueus, beeomes suffieiently intense to inflame and exeoriate the external parts with whieh, in eseaping, the produet is neeessarily brought into eontact.

The prevention of pregnaney under these eireumstanees, may be oecasioned in three ways: *in the first place,* the inflammatory aetion going on within the uterus, and which is

liable to be aggravated under states of venereal exeitement, may prevent the formation of the *membrana decidua*, and the ovum, even although impregnated, is necessarily thrown off without any manifestation of its existenee in the fertilized state; *secondly*, the diseased condition of the lining membrane of the uterus may be extended to the Fallopian canals, obliterating for the time their internal orifiees, so as to oppose an insurmountable obstaele to the admission of the spermatie fluid within them, and thus to render the fertilizing effort abortive; *thirdly*, the nature of the seeretion furnished by the internal surfaee of the uterus or of the vagina, under certain states of disease, may be inimieal to the aetive existence of the spermatozoa, oeeasioning their destruetion before they arrive at the extrieated ovule. The conditions under whieh the two first propositions are eapable of being verified, have been sufficiently dwelt upon already; in reference to the latter, a few brief remarks may not be inappropriate in this plaee.

The spermatozoa (or spermatozoides, as they have reeently been termed by several eminent physiologists, who seem inclined to question their existenee as independent animalcules,) are alone eontained in the spermatie fluid of the male, of whieh they eonstitute the essential or fecundating property. By their non-existenee therefore in this seeretion, the fluid is deprived of its fertilizing influenee; this may at least be reasonably inferred, as observed by Dr. Carpenter, from several circumstances, such as their absence or imperfeet development in hybrid animals, whieh are nearly or entirely sterile: and the fact that feeundation essentially eonsists in the direct communication of one of them with a certain point in the ovum. Various opinions are entertained respecting the precise point at which the two elements of germination are brought into contact; some having stated that the spermatic animalcule has been found to have traversed the whole length

of the Fallopian canal, while the ovule was still contained within the cavity of the corpus fimbriatum; in other instances, their communication has been witnessed in the course of the tube, sometimes near its inner extremity, or even after the ovule has been deposited in the cavity of the uterus. The last-named situation, it has been contended, is that at which impregnation is probably always effected under normal circumstances; but the occasional occurrence of extra-uterine fœtation proves that fertilization may take place at any point between the ovarium and the uterus.

The spermatic animalcules are capable of living for a length of time in an isolated condition, their existence being prolonged or otherwise according to the nature of the media with which they are brought into contact after emission. Thus, in healthy vaginal mucus collected from females after copulation, they are seen to move actively for several days; while the product of the same organ, or that of the uterus, in certain states of disease, will cause them to perish instantly. This fact has been demonstrated by M. Donné, who, in his experiments, employed the mucus of both these organs, separately and conjointly, in their respective states of health and disease. At page 291 of his work *(Cours de Microscopie,)* M. Donné observes: "As might be expected, the Zoospermes (Spermatozoa) live perfectly in the mucus secreted by the vagina in its normal state." "But," he proceeds in the following page, "the vaginal mucus becomes so acid in some circumstances, as in cases of congestion, irritation, or inflammation of this organ, that the Zoospermes appear to perish in a few seconds after being brought into contact with it. The same effect was also produced by the vaginal mucus secreted during pregnancy; this fluid exhibiting its acid properties in a much higher degree of intensity in the gravid than in the unoccupied state of the uterus. The latter fact I have long been familiar with, but have not had

an opportunity of witnessing the effect of this produet upon the spermatie fluid under the mieroscope. M. Donné says: "What seems to me remarkable is, that the vaginal mueus of pregnant women, has generally appeared to be inimieal to the existenee of the Zoosperme; and, in faet, the state of eongestion whieh exists in these parts during pregnancy, is that under whieh the acidity of the vaginal mucus ordinarily becomes very deeided." He appears to be unaware of the fact, however, that the secretion of the vagina and that of the uterus, in their healthy condition, are essentially different in their chemical properties: hence the conelusion arrived at by him respeeting the cause of the phenomenon in question;—a conelusion whieh I have reason to believe to be erroneous. It is highly probable that the same proportion of the aeid component is eliminated by the seereting apparatus of the vagina, both during pregnancy and at other times; the remarkable differenee noticed in the two states, being determined by presenee or absenee of a powerful modifying agent — the uterine mucus, the formation of whieh is neeessarily suspended during pregnaney. I have before endeavoured to shew, on testimony of experiment, that uterine mucus in its healthy state, exhibits an alkaline reaetion, while that of the vaginal secretion under like eircumstanees, is always acid; and although in the product resulting from their combination, the latter generally appears as the predominant property,—eonstituting in faet the distinguishing charaeteristie of this fluid; nevertheless, the tendency of their union is eonstantly towards neutralization; eonsequently, the highly acidified state of this produet ean only result either from withdrawal of the uterine mucus, as during pregnancy, or from ehange of its properties by disease. We have here then within easy aecomplishment — if M. Donné's statement respeeting the destruetive nature of the ehanged secretion should hereafter be found correct and of general application — a means whereby

satisfactorily to elucidate the pathology of sterility, in some women at least, as well as several other important phenomena connected with this branch of physiology, which have heretofore been considered inexplicable upon scientific principles. But to proceed.

In reference to the effect produced upon the vitality of the seminal fluid by contact with *uterine mucus*, M. Donné remarks at page 294: "Generally speaking, the Zoospermes brought into contact with uterine mucus, do not appear to experience any deleterious influence, even when this product has lost its state of purity, and become more or less purulent." "But," he proceeds, "certain kinds of uterine mucus, kill the animalcules with the greatest rapidity; thus, while they continue lively and active for several hours in the secretion taken from one woman, they appear to perish on the instant, and to lose entirely the power of motion, in that taken at the same time from another person; the experiment being performed under like circumstances in both cases." This author considers that the deleterious action exercised by certain mucous products of the uterus upon spermatozoa, is to be attributed to the excess of alkali which the secretion appears to contain in some women, or in some states of disease. I am inclined, however, to question the validity of this statement; having grounds for believing that the condition most frequently and most powerfully effective in preventing fecundation, is that under which the secretion becomes endowed with a property precisely the opposite of that which he assumes to be peculiarly deleterious.

I look upon the statements of the author just quoted, in addition to results obtained in the course of my own observations already noticed in several parts of this volume, together with others to be presently adduced, as constituting a body of facts of no mean importance in the study of the physiology and morbid changes of the uterus. It should be borne

in mind, to reiterate the circumstance, that uterine mucus, both in its healthy state, as well as under certain morbid conditions, exhibits an alkaline reaction. This I have ascertained by experiment more than a hundred times repeated. Its tendency is to modify the opposite quality possessed by the mucus of the vagina. But in chronic endo-uteritis, and perhaps in other forms of disease also, its nature is entirely different, and instead of the salutary change which, under normal circumstances, it operates upon the product with which it becomes incorporated, an effect the opposite of this is produced. If vaginal mucus therefore, in the highly acidified state in which it is found when deprived of its other component, be proved to be inimical to the existence of the spermatozoon; it is not unreasonable to infer that the same deleterious property will also be possessed by it when the uterine secretion is withheld from other causes; and its nature will be still more energetically destructive in those cases wherein both are possessed of similar properties.

A question, naturally arising out of the preceding considerations, may not inaptly be advanced in this place. It is this: might not the circumstance of these marked differences in the organic products as they are found to exist under different conditions of the system, be rendered available as an auxiliary means in diagnosis? If it were practicable for instance, correctly to estimate, by appropriate tests, the relative intensity of acidity of the vaginal mucus in the two states of pregnancy and uterine quiescence respectively, it is not improbable, at least, that some information might be gleaned in this way, even so early as during the first few weeks of pregnancy, a period when most other modes of inquiry are of little avail; such aid might prove more particularly serviceable in cases submitted to juridical investigation, where a positive decision on this point is sometimes of vital importance to the party accused.

The causes of uterine barrenness of the class now under consideration exist, generally speaking, within circumscribed limits; but like most local affections of long standing, require constitutional measures for their removal, and are often, indeed, amenable to this kind of treatment alone. For example; instances of perfect cure having been accomplished during the prevalence of a violent eruptive or inflammatory fever — no matter whether the result be due to the infusion of the materies morbi or to the action of the remedies administered during its existence; by change of air, sea-bathing, long abstinence from sexual indulgence, and other means capable of changing the secretions, or of acting alteratively upon the system at large, are sufficiently familiar. M. Donné very reasonably submits, — "Is it not remarkable that the means which appear to have been employed with the greatest success against sterility, such as sea-bathing, for example, are at the same time those which act upon the economy in general, as powerful modifiers of the secretions?" But in addition to constitutional treatment, local measures are also of great importance, and, as will presently appear, in some instances, are of themselves sufficient to accomplish the cure.

Case XLVIII.

Sterility during twenty-one years; sanious leucorrhœa and infirm health; return of fertility after an attack of fever.

In August, 1845, a poor woman named Crichton, aged forty-one, was admitted a patient of the Manchester Lying-in Hospital, being eight months advanced in her second pregnancy. She was married at the age of eighteen, and bore her first child alive, at the full term of utero-gestation, twelve months and a half afterwards. About the middle of this pregnancy, she had an attack of inflammation of the bowels, imminently threatening abortion. During convalescence,

she noticed for the first time a leucorrhœal discharge; this continued until the end of pregnancy, which terminated successfully on the 5th of September, a few weeks after she had completed her nineteenth year of age. Her recovery was protracted and incomplete. She had an attack of secondary flooding six weeks after confinement, and menstruated at irregular intervals, and in variable quantity, during the subsequent part of the lactating period.

She was never afterwards free, when not menstruating, from leucorrhœa, which was always of a yellowish or brownish colour, of variable consistence, frequently offensive, and occasioning constant excoriation ("rawness") of the external parts, for the relief of which she was in the habit of using Fuller's earth. Pregnancy did not again take place until after the lapse of twenty-one years, during the whole of which period she suffered from the same leucorrhœal affection, with all the symptoms of ulceration of the cervix uteri. The menstrual functions were discharged with tolerable regularity, but always with great suffering; the secretion being variable in quantity, sometimes clotted, grumous, and offensive.

Her husband survived sixteen years, and she married a second time twelve months after his death, her health having somewhat improved in the interim. Two years and three quarters after marriage she experienced an attack of fever, for which she was an in-patient of the Manchester Fever Hospital, after which she enjoyed excellent health: "the fever having set her up." All symptoms of uterine disturbance disappeared on the accession of the febrile affection, and did not afterwards return. Pregnancy took place eight or ten weeks after convalescence, and she was delivered in due time of a living child at the full term of utero-gestation. The uterus, which was examined previous to her dismissal from the Lying-in Hospital, exhibited traces of former disease, but was perfectly healthy.

Case XLIX.

Sterility; dysmenorrhœa; sanio-purulent leucorrhœa; endo-uteritis.

I was recently consulted in a case of leucorrhœa and painful menstruation, the subject of which was a lady of irritable constitution, twenty-five years of age, married four years and a half. It was stated that the uterine functions were developed, without much inconvenience, at fifteen, and continued to be comfortably discharged for two or three years. In her eighteenth year, she had a protracted illness brought on by exposure to cold, after which she menstruated with some degree of suffering, and occasionally had a slight leucorrhœa. A few weeks after marriage, in her twenty-first year, she was seized with a violent peritonitis which had nearly proved fatal. The menstrual functions were suspended during this illness, but became re-established on the approach of convalescence, and were afterwards regularly discharged, although not in the same comfortable manner as formerly. Each period was preceded by rigors and febrile irritation, pain of the loins, of the hypogastrium and limbs, and occasional vomiting; the discharge continued several days longer than it was wont to do, being more abundant, occasionally mixed with clots, and not unfrequently with shreds of membrane. During the whole of each menstrual interval, a profuse sanious leucorrhœa prevailed; the health was constantly in a depraved state, the general symptoms being those of aggravated chlorosis.

Such were the characters of the case, with the addition also of alarming attacks of palpitation, on the occasion of my first interview, brought on by the least exertion or excitement. She had never been pregnant. The morbid organic product exhibited acid properties both at the os externum and at the os uteri. The whole uterus, so far as manipulation was capable of ascertaining, was in a state of inflammatory

hypertrophy; from the orifice, which was surrounded by an irritable, inflamed surface, highly sensitive to the touch, escaped a quantity of the sanio-purulent secretion characteristic of endo-uteritis.

Case L.

Sterility fifteen years; secondary syphilitic affection of the uterus of sixteen years' duration; sanious leucorrhœa; painful menstruation; pregnancy; cure.

A. B., thirty-three years of age, of the bilious temperament, was first married at seventeen, having previously enjoyed good health. A few weeks after marriage she contracted syphilis from her husband; the affection appeared in form of primary sores on the external parts, purulent discharge, and swellings in both groins; some time afterwards she had sore throat, and eruptions around the mouth. She took medicine, but was not salivated; the sores were treated with caustic and lotions, and the cure was considered as being perfected in about a month.

After this date she was constantly in delicate health, complaining of languor, aching of the loins, irritability of the bladder, fixed pain of right hypogastrium, and precarious appetite. A sanio-purulent leucorrhœal affection commenced at the same time, and continued, almost without interruption or abatement, for fourteen or fifteen years. She menstruated with suffering, the discharge being abnormally profuse, sometimes clotted or grumous and offensive. She had no offspring by her first husband, who died at the end of twelve years, when she had attained the age of twenty-nine. Twelve months afterwards, being in a somewhat better state of health, she was a second time married; this circumstance necessitated her removal to a distant and, as it would appear, a healthier district, as the change was soon followed by a marked improvement in her physical condition, which was

partieularly manifest in an invigorated state of the digestive organs, amelioration of the menstrual suffering, and diminution of the leucorrhœal seeretion. Shortly after the age of thirty-two, she beeame for the first time pregnant, and requested my attendanee on being threatened with abortion a few weeks after the occurrence of quiekening. It was on the oecasion of my first and subsequent visits that the above partieulars were reeounted to me; there ean be no reasonable doubt as to their correctness, as the woman is a person of character, wanting in the motives for making a false representation.

The leucorrhœal diseharge had never been entirely absent since its first appearance at seventeen years of age; it had undergone some abatement after her second marriage, but was again augmented during pregnancy, and for several days previous to my attendance, it had frequently been mixed with blood: this circumstance, together with the oeeurrence of intermittent bearing-down pains, had excited fears for the safety of the fœtus in utero.

The cervix uteri was unusually large and firm; the boundary of the orifice was covered with granulations whieh appeared to extend to the interior of the organ; the outer boundary of this ulcer was marked by a raised margin, beyond which the surfaee of the eervix was of a dark-red eolour and mottled; a fissure oceupied the right eommissure, from which and from the adjoining granulations blood was exuding. On communicating my suspicions respecting the syphilitie nature of the complaint under whieh she was labouring, her history as above given was related in a straight-forward manner; but she was unwilling to believe that any trace of the venereal affection remained in her eonstitution, so that no treatment was adopted having reference to that partieular purpose. Her delivery took place on the 11th of July, 1846, at the full period of utero-gestation.

Four weeks after delivery, the child, which at birth was plump and healthy-looking, had become wan and emaciated; its face, chest, nates, thighs, legs and feet were covered with dark-red, scaly patches; the throat was swollen and patchy, and the voice husky. The mother, who referred regrettingly to her unbelief respecting my statement on a former occasion, was now forcibly convinced as to the specific nature both of her own and her infant's complaint. The uterus bore still the same evidences of internal inflammation, and the surface of the cervix exhibited the same mottled appearance as before described. Both she and her infant were submitted to a course of alterative treatment, under which the complaint gradually yielded, and the cure appeared to be complete at the end of eleven or twelve weeks.

Case LI.

Sterility during five years; endo-uteritis; sanio-purulent leucorrhœa; death from puerperal peritonitis and uterine phlebitis; post-mortem appearances.

R. C., aged forty, seven months advanced in her fourth pregnancy, applied to me on the 4th of September, 1846, labouring under a profuse leucorrhœa mixed with blood, together with symptoms threatening abortion. She had previously borne three children at the full term of utero-gestation. In the early part of her preceding pregnancy, she had suffered under an acute attack of inflammation of the belly, accompanied by leucorrhœal discharge, which had existed ever since, together with violent lumbar and hypogastric pains, and disordered secretions. The child, which was born alive at the full term, had purulent ophthalmia. She had afterwards painful menstruation occurring irregularly, the intervals being occupied by a thin, brownish, offensive secretion, which excoriated the external parts.

On the occasion of her application to me, the discharge in

question was still profuse, and slightly mixed with blood. The cervix uteri was in a state of inflammatory hypertrophy, and the boundaries of the orifice were occupied by granulations. By means of treatment, the symptoms were considerably modified and the threatened premature crisis averted: she was delivered of a full-grown, healthy-looking child two months afterwards. On the ninth day after delivery, she was attacked with acute peritonitis, of which she died twenty-two days after the invasion of the symptoms.

On inspection of the body twenty-four hours after death, the peritoneal cavity was found to contain a quantity of milky serosity, in which floated shreds of albumen-like coagula; the pelvic, hypogastric, and enteritic peritoneum was injected, thickened, interspersed with dark-coloured, softened patches, covered here and there with layers of false membrane. The walls of the uterus were unusually thick and soft, and the venous sinuses were filled with pus. The lining membrane was greatly thickened, exceedingly soft, tufted, and here and there eroded. The cervix and labia were hypertrophied and elongated, the latter as well as the internal cervix, being covered with granulations, which were of a very dark livid hue; an appearance which these parts almost always present under like circumstances, and which is due, I apprehend, to some particular action of the morbid secretion after dissolution, as I have never observed a similar phenomenon during life.

Case LII.

Sterility during six years; procidentia uteri; endo-uteritis and ulceration of cervix; cure.

H. H., twenty-six years of age, of the bilious temperament, came under treatment for procidentia uteri and leucorrhœa, in January, 1847. She was married at nineteen, having been previously in good health, and bore her first child, who lived

only a few hours, ten months afterwards. During pregnancy she was troubled with yellow leucorrhœa, accompanied with the train of symptoms usually attendant upon this form of disease, and was frequently threatened with miscarriage. Her recovery was protracted; she afterwards menstruated with great suffering, the discharge being profuse and frequently clotted; and the leucorrhœal secretion occupied the whole of each menstrual interval. The "bearing-down," for the relief of which she had been prescribed a pessary, first made its appearance beyond the external parts about twelve months before the case was presented to my notice.

On the occasion of my first examination, the whole body of the uterus, which was considerably hypertrophied, and painful upon pressure, was situated external to the vagina, so that the aid of the speculum was uncalled for as a means to investigation. The entire surfaces of the labia were covered with granulations, and the same condition appeared to exist upon the parts within the orifice, from which exuded a reddish, offensive sanies in considerable abundance: the lower part of the labia externa and the parts about the fourchette and perineum, were excoriated, from contact with the morbid secretion. This thin fluid exhibited acid properties.

The treatment adopted was similar to that which has been already indicated in ulceration of the cervix and procidentia. No mechanical support was employed for maintaining the organ in situ; yet it is now (April 30,) perfectly normal; there is not the least appearance of leucorrhœa; the menstrual functions are discharged regularly and without noticeable inconvenience; and the health is vigorous.

The preceding cases are, in my opinion, amply sufficient to show that sterility may be occasioned by a very simple form of local disease. And although the recovery of the aptitude for child-bearing was in none of these instances directly attributable to the effect of artificial measures; the possibility of

perfectly restoring the lost function by due attention to the prevailing cause, and the proper application of remedies, may nevertheless be reasonably inferred. The following examples, however, are more directly applicable; they were all considered as cases of confirmed sterility; in all, the same form of disease existed; they were all sufficiently long under my immediate observation for witnessing the full effect of the remedies employed; and the cure was equally perfect in each instance.

Case LIII.

Sterility for six years after marriage; profuse leucorrhœa; ulceration of the cervix and endo-uteritis; two subsequent abortions; cure; successful pregnancy.

Mrs. C., a lady in comfortable circumstances, of irritable temperament, was married in 1838, at the age of twenty-one, having previously enjoyed good health. A few weeks after marriage, she became affected with purulent leucorrhœa, which was suspected of being of gonorrhœal origin, and treated accordingly. The symptoms were: profuse discharge from the vagina of a yellowish appearance, painful micturition, excoriation of the external parts, bearing-down, and fever. She was treated by bleeding, by the exhibition of internal remedies, by the use of lotions and injections; and afterwards took the benefit of change of air, by which means the more urgent symptoms were considerably alleviated. The external inflammation became subdued, the disturbance of the urinary organs disappeared, and the general health was greatly improved; but the leucorrhœal affection remained very little altered, except that the discharge was somewhat less profuse, but exhibited the same characters as before. It subsequently became aggravated from time to time, on the application of slight causes, as from exposure to cold, or after severe exercise; and it was always augmented a few days previous to each menstrual period. The discharge

of this function also was attended with much greater suffering than formerly; the secretion was more abundant, continued several days longer than it was wont to do, being sometimes clotted, or grumous and offensive, and occasionally, towards the end of the period, mixed with membranous substances.

This state of disturbance continued, with varying degrees of severity, for six years, until the occasion of my first interview in September, 1844. She had never been pregnant. Her appearance and actual condition were such as are commonly consequent upon the long prevalence of impaired function, or upon specific structural change; — sickly paleness of the skin, muscular emaciation and debility, vitiated secretions, aching of the loins, loss of rest or unrefreshing sleep, and extreme irritability of temper. The whole uterus was found in a state of inflammatory hypertrophy, painful under pressure; the cervix was slightly indurated; and an angry-looking, granulating ulcer of irregular shape occupied the lower and inner parts of both labia, and appeared to extend within the orifice of the uterus, whence flowed a thin ichorous secretion.

The treatment adopted was of the alterative and tonic kind, consisting of iodide of iron and sarsaparilla, with the addition of astringent injections. At the end of six weeks, the discharge being considerably diminished and her general health improved, the remedies were discontinued at her own suggestion, although perfect restoration was by no means accomplished.

About six months afterwards, (in March, 1845,) I was summoned to attend the same patient, labouring under an attack of flooding. She believed herself to be pregnant, not having menstruated for thirteen weeks. The discharge came on suddenly whilst walking in the street on the morning of the day in question; it was attended with severe forcing

pain of intermittent character, which had since continued to recur at short intervals. Upon tactile examination, the os uteri was found occupied by a soft substance, of the dimensions of a poulet's egg, immovable by mild manipulatory effort; but which, after the exhibition of a few doses of secale cornutum, was expelled, and the pain ceased. This substance was an entire ovum, with its envelopes unbroken; it contained a perfectly formed fœtus about an inch and a half in length. Her recovery was favourable. On examining the uterus a fortnight after delivery, the cervix was hard and resistent, and the labia lobulated. Specular inquiry was not practised. Injections were again had recourse to, but relinquished after a few days. From this date I lost sight of her for several months, in consequence of her removal to a remote district.

In November of the same year, she had a second abortion at the end of the fifth month of pregnancy, attended with profuse hœmorrhage. She now expressed an anxiety about her ease, and begged that the necessary means might be adopted for its efficient cure. The leucorrhœal affection was said to have become considerably aggravated previous to miscarriage, and appeared to be in a similar state a fortnight afterwards when the treatment was commenced. On the introduction of the speculum, which was now used for the first time, the cervix appeared unusually large, hard, exhibiting several patches of excoriation; two deep ulcerated fissures occupied, one the left commissure, the other the middle of the posterior labium; the orifice was surrounded by a bright red, inflamed surface, and the whole was covered with a sanio-purulent secretion, which became considerably mixed with blood during examination. The nitrate of silver was freely applied to all the diseased surfaces, as well as within the cervix, and was afterwards several times repeated at intervals of six or seven days. She also resumed the use of iodide of iron combined with extract of cinchona. At the

end of eleven weeks, the cure was complete: every part of the uterus was perfectly healed and of normal dimensions and consistence; the mind was cheerful and happy, the health vigorous; and, for the first time since marriage, she was free from leucorrhœa.

She was delivered of a living child at the full period of utero-gestation, on the 25th of December, 1846.

Case LIV.

Sterility seven years after marriage; profuse leucorrhœa; ulceration of cervix uteri and probably endo-uteritis; cure; successful pregnancy.

Mrs. U., a lady in very comfortable circumstances, of the lymphatic temperament, was married at the age of twenty-eight, in July, 1837. Her health for some time previously had been indifferent, owing, apparently, to disordered menstruation, which, although periodically performed, was always attended with considerable difficulty; the discharge also was profuse, and she suffered occasionally from mucous leucorrhœa. Her complaints were no way alleviated by marriage, but rather the contrary; the menstrual functions became still more decidedly deranged, each recurrence being preceded and accompanied with violent pain of the loins and along the spine, distension and pain of the hypogastrium, loss of rest, rigors, and fever. The leucorrhœal affection was likewise aggravated, the secretion being furnished in greater abundance, and assuming a sanio-purulent character. She was almost constantly under medical treatment, from which she derived only temporary benefit.

This case was first brought under my notice in the summer of 1841, at which period the health was in a very infirm state, although the patient was not entirely disabled from attending to her domestic duties. The symptoms above-named were as distressing at this time as they had been at any former period,

and in addition she had recently began to suffer from excoriation of the external parts, bearing-down, and pain in voiding the urine. I treated her during that and the two following years with little more sueeess than had attended previous efforts. In August, 1844, from exposure to the night air, she experieneed a slight attaek of peritonitis. The leueorrhœal diseharge underwent abatement during the aeute stage of the inflammation, but retnrned in its wonted form on the approaeh of eonvalescenee. I now for the first time proposed and obtained permission to make a taetile examination of the uterus. The organ was found low down in the pelvis; its body was eonsiderably enlarged and painful, the eervix was unusually full and resistent, and the labia presented a broad, velvety but uneven surfaee, on one side of which were two firmer, projeeting nodules whieh I have no doubt were the boundaries of an uleerated fissure. The use of the speeulum was objeeted to. The examination, although unattended with the least suffering, occasioned effusion of blood.

In addition to the eurative measures already adopted, an injeetion of nitrate of silver was now ordered, and direetions given that in using it the syringe should be introdueed as high up as possible. The remedy consisted of a dram of the salt dissolved in six ounees of liquid. I had soon reason to regret this seemingly bold step. On the third day, the solution having been perseveringly used five times, I found the patient in high fever: the diseharge had been suddenly arrested; the external vagina was enormously swollen and erysipelatous, and there was suppression of urine requiring the use of the eatheter. A eonsultation was held with an elderly praetitioner, and I was eensured, not by him, but by the patient's friends, for having eommitted what was then looked upon as a serious error in praetice. In the eourse of a few days, the inflammatory disturbanee subsided, and the patient improved rapidly: she afterwards spent a few weeks in the country, and returned in better

health than she had experienced since marriage. The so-called mistake had completely cured the leucorrhœal affection, and consequently the uterine disease also: she shortly became pregnant, and was delivered of a living child at the full term of utero-gestation, eleven months after the injection had been used.

Case LV.

Sterility during four years and a half; endo-uteritis; cure by means of nitrate of silver injection into the uterus; successful pregnancy.

Mrs. S., aged thirty-one, of the sanguine temperament, was married at twenty-four, and miscarried before the period of quickening, about six months afterwards. During the whole of this pregnancy she had been troubled with leucorrhœa, together with the disturbances usually attendant thereon. The symptoms, although peculiarly characteristic, had been altogether misapprehended. She constantly complained of a fixed pain of the hypogastrium, situated on the left side near the inguinal canal; violent pain, with tenderness under pressure, along the spinal column, extending from the third dorsal vertebra to the sacrum; and occasional paroxysms of spasms, which were sometimes followed by fainting, but never by insensibility: all which symptoms were aggravated immediately before and during menstruation. This case, which had been under the care of several different practitioners, had usually been regarded as one of "spinal irritation," and treated accordingly.

On the occasion of my first interview in April, 1845, all the symptoms above-enumerated existed to a distressing degree of severity. It was four years and a quarter since the occurrence of the abortion alluded to; she had menstruated at irregular intervals during the interim, and all the time had had sanious leucorrhœa, and considerable urinary disturbance. The lower part of the uterus was in a state of

inflammatory hypertrophy; the labia were thickened and projecting, and presented the ring of vivid redness around the orifice indicative of internal inflammation. To these parts the solid nitrate of silver was freely applied; leeches were applied alternately to the sacral and hypogastric regions, and remedies of an alterative character were administered. At the end of three months, her condition being remarkably improved, although the leucorrhœal discharge was still present, she became pregnant, and the cure was looked upon as miraculous.

As pregnancy advanced, however, the spinal and abdominal irritation, leucorrhœa, and most of the other symptoms returned in all their former severity. Soon after quickening, attacks of intermittent pains similar to those of labour, came on, the discharge was mixed with blood, and my attendance was solicited for the purpose of facilitating delivery, which was considered as being near at hand. The cervix uteri was large, inflamed, and excoriated, and a granulating surface occupied the boundaries of the orifice. To all these parts nitrate of silver was again freely applied; two grains of opium combined with an equal quantity of *hydr. subm.* were given, and the strictest quietude enjoined. On the following morning she was free from pain; she had scarcely slept at all, but had been perfectly tranquil the whole night. Anodyne remedies and applications of caustic, with due attention to the alvine functions were found occasionally necessary during the remainder of the process, which terminated in the birth of a living child of full growth, on the 5th of April, 1846.

During the first few weeks of the lactating period, the patient experienced several attacks of hysteric convulsions; the spinal and abdominal suffering remained severe, and the leucorrhœal secretion, although scanty, still exhibited sanio-purulent properties. Under the impression that change of air might be of service, she was removed, in May, to the residence of her relatives in Denbighshire, whence she returned,

after an absence of fourteen weeks, almost as severely afflicted as ever. She had frequent convulsive paroxysms, with pain and tenderness along the spine, pain of the hypogastric region, leucorrhœa, and bearing-down. Medical treatment had been practised during her stay in Wales, but afforded only temporary benefit, and she now anxiously solicited a repetition of the means which had been used on a former occasion by myself.

Upon specular examination, the cervix uteri presented the same appearance as formerly described; but the opposing margins of the labia had a sharp and flabby aspect, being fringed with angry-looking granulations. It was evident that the principal seat of irritation was the internal surface of the organ, and the plan already recommended for adoption in cases of this class, was now consequently put into practice. A weak solution of nitrate of silver was forcibly injected into the cavity of the uterus. The operation, which caused not the least pain or inconvenience, was attended with the most gratifying result; all irritability, pain, and discomfort ceasing almost instantly. It was again practised ten days afterwards, although there was not the slightest indication for its repetition; the labia uteri having resumed their normal aspect, and the morbid secretion completely disappeared. The first injection was introduced on the 24th of September, since which, now more than eight months, she has not had the least symptom of her former or of any other ailment, nor has she since taken a single dose of medicine. She has the appearance of one in robust health

Case LVI.

Sterility four years and a half; sanio-purulent leucorrhœa; ulceration of labia uteri, and endo-uteritis; cure; successful pregnancy.

Mrs. N., of the bilious temperament, in comfortable cir-

cumstances, was married at the age of seventeen and a half, having previously enjoyed good health. The first menstrual change took place at twelve years of age, and the function was regularly and uninterruptedly discharged afterwards. In the second week of her married state a leucorrhœal discharge was for the first time noticed, accompanied with distension and tenderness of the abdomen, irritable bladder, and fever. The acute symptoms lasted upwards of a week, during which time she had several attacks of hysteric convulsions. From this period her health was delicate; she had a constant leucorrhœal discharge of a brownish colour, with lumbar and hypogastric pains, until the age of twenty-one, when I attended her during an attack of peritonitis, accompanied with hysterical symptoms. Menstruation had been regularly performed; but from oversight or forgetfulness on my part, the leucorrhœal affection, although mentioned in connection with her previous history, received no special attention.

Eleven months afterwards (November, 1845,) I was again consulted by the same person, on account of a "weakness" under which she had laboured, not only since the occasion of my previous attendance, but ever since marriage. She was sallow and emaciated, complained of palpitation, slight, tickling cough, hurried breathing upon the slightest exertion, and was considered to be in a state of confirmed "decline." She had constant pain of the loins and along the spine, pain of the hypogastrium and bearing-down; for the last symptom the use of a pessary had been recommended, which, fortunately, had not been adopted. Once every third or fourth day, she experienced an attack of hysteric convulsions, preceded by tympanitic distension of the lower bowels, flatulence, and violent forcing pains similar to those of labour. The fit was succeeded by great lassitude, palpitation, and weeping. Whilst menstruating, which function was periodically performed, some relief was experienced, but the whole train of

symptoms returned immediately after ceasing, and continued in unmitigated severity until the succeeding crisis: the whole of each menstrual interval was occupied by a profuse sanio-purulent discharge, nearly equalling in quantity the catamenial secretion, and requiring, in the event of moving abroad, similar precautionary measures.

Upon examination, the external parts were swollen and excoriated, but the rest of the vaginal membrane appeared perfectly healthy. The uterus occupied its normal position; its body communicated a sense of fulness, and was painful under slight pressure; the cervix was thickened; the labia, especially anteriorly, were unusually large, hard, and irregular. By aid of the speculum, the whole circumference of the orifice appeared to be one continuous granulating surface, reaching within the cavity of the organ; externally the parts had an erysipelatous character, with here and there a patch of excoriation; and the posterior labium and right commissure were cleft by shallow fissures: from all these parts, during a catamenial period, the discharge was seen issuing, as well as from within the uterus. The treatment occupied a period of about three months, as I find the last report dated 7th Feb. 1846. She was at this period in excellent health; the uterus was entirely free from every appearance of disease, and, for the first time since marriage, the leucorrhœal affection was entirely absent.

She became pregnant, and was delivered of a living female child of full growth on the 21st of December of the same year.

Other instances of a character similar to the preceding might be adduced were it necessary. Further illustration, however, it is thought, could answer no useful end: for, whatever additional weight the opinions now promulgated and the principles sought to be established might gather by accumulation of facts; yet, the narration of a number of cases, not differing essentially, so far at least as they bear upon the present subject, from those already enumerated, might

unnecessarily amplify and encumber the volume, which has already exceeded its originally intended limits.

I have now completed a task which, as the recipient of an important public trust, I deemed it incumbent upon me to fulfil. The field for observation over which, — from facilities afforded by my esteemed colleagues, — I have enjoyed an almost unlimited range, in the amount and variety of material which it affords, is probably unequalled by any other of similar character in the kingdom. It may with truth be added also, that the branch of study to which it especially refers, has perhaps no parallel in medical science, whether as regards the poverty of knowledge relative to its physiological history; the want of success commonly attendant upon the management of its pathological conditions; or the opportunities consequently afforded for the exercise of empiricism and imposture. In what measure the preceding contributions may serve to supply these deficiencies remains to be seen. If their beneficial effect upon practice be but proportionate to the good which it has been my pleasure to witness in the numerous instances of severe and prolonged suffering which have been constantly brought under notice, my object will be fully and most gratifyingly attained.

The investigation of uterine pathology has always been looked upon as fraught with peculiar difficulty; — as involving the necessity of a procedure to which insuperable objections are likely to be raised. It is needless to remark how entirely this allegation is fanciful and unfounded. In ninety and nine out of every hundred cases in which there is reasonable ground for suspecting the existence of uterine disease, — interfering as it does with every comfort, and spoiling every enjoyment of life, — any perplexity that may arise merely against the mode of administering to the relief of the malady, cannot, and does not originate with the sufferer.

Among those most likely to raise objections against the mode of practice now recommended, some may probably be met with not hesitating to deny the prevalence of uterine disease to the extent now stated, or who may even doubt of its existence at all, so far as their own experience goes; others, acknowledging its occasional prevalence, may possibly object to the curative measures proposed for its relief; asserting the sufficiency of the plans which they themselves have heretofore been in the habit of employing. For both these my answer is the same: I have recorded but facts. There is another class who, — laden with years, furrowed with the routine of long experience, to whom a certain unvarying regimen has become as a part of their nature, — still entertain the belief, that the school in which they were taught, and the maxims therein imbibed, embody the principles of a system the type of perfection, — not to be disturbed by additions and improvements, so denominated, and from which nothing can be safely or advantageously removed. Such may be inclined to regard the suggestions now offered as an useless innovation. To them I would respectfully say, in the words of a great philosopher: — "Quid, quod etiam addiscunt aliquid? ut Solonem versibus gloriantem videmus, qui se quotidie aliquid addiscentem senem fieri dicit. . . Nemo enim est tam senex, qui se annum non putet posse vivere."

THE END.

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6

ERRATA.

Page 2, line 15, for *till*, read *until*.
,, 2, line 2 from bottom, for *latest*, read *latent*.
,, 15, note (1), for *Microscope*, read *Microscopie*.
,, 38, line 19, after *labia*, read *were*.
,, 125, line 2 from bottom, for *spot*, read *vesicle*.
,, 194, line 9 from bottom, for *opposition*, read *apposition*.
,, 222, line 9 from bottom, for *thee*, read *the*.
,, 230, line 20, for *The*, read *They*.

